1-1-1985

The dividend policy of U.S. owned foreign subsidiaries.

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THE DIVIDEND POLICY OF U.S. OWNED FOREIGN SUBSIDIARIES

by

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Submitted to the Graduate School of the
University of Massachusetts in Partial Fulfillment
of the Requirement of the Degree of

DOCTOR OF PHILOSOPHY

September 1985

School of Management

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FOREIGN SUBSIDIARIES

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DEDICATION

TO my father

who died in Korea while I was

studying in the United States of America

ACKNOWLEDGEMENTS

In the course of writing this dissertation, I truly realized how important the comments and advices of my committee members were. The four individuals to whom I would like to express the greatest thanks are the members of dissertation committee: Professor Joseph Finnerty, Professor Jim Owers, Professor Bertil Liander, and Professor James Kindahl.

Professor Finnerty, now the professor of finance in the University of Illinois at Urbana-Champaign, has served as a Chairman. Joe encouraged me throughout the whole dissertation processes such as topic selection, data gathering, and detailed scheduling. Joe has always given me the conviction that I could make this dissertation at the end.

Professor Owers has made sharp criticisms on my paper whcih made me work harder. I got many improvements from Jim's comments.

Professor Liander has always offered me warm encouragements which made me comfortable whenever I saw him.

Professor Kindahl has helped me a lot as an outsider

member, proposing various advices on methodologies which were great contributions to my study.

I would also like to thank Tony Butterfield, the director of the Ph.D Program, for the encouragements and advices from the beginning to the end of my study in the Ph.D Program.

My special thank to my colleague David Echevarria, who had once stayed in Korea, has offered a lot of technical and professional supports to my study.

Lastly, I would like to thank my wife Myungja and my son Taehoo for patience, understanding, and emotional supports which have been real aids to my study in this country.

A B S T R A C T

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The purpose of this study is to identify models of behavior which explain the dividend policy of U.S. owned foreign subsidiaries from 1964 to 1982. Dividend payment behavior of U.S. corporations was first explained by Lintner (1956) who found that the dividends depend in part on the firm´s current earnings and in part on the past dividends. The question of interest is: Can Lintner´s model explain repatriation of earnings from U.S. owned foreign subsidiaries to their U.S. parent?

The study was done in three phases. In phase one tests were done in order to ascertain dividend payment behavior regarding the U.S. parent companies and their foreign subsidiaries. The results of the tests showed that the U.S. owned foreign subsidiaries had more stable dividend payment records than their U.S. parent

companies. Also, they did not follow their U.S. parent companies´ dividend payout policy.

In phase two Lintner´s partial adjustment model was extended to explain dividend payment behavior of the U.S. owned foreign subsidiaries. The study examined whether Lintner´s model was misspecified, or if the explanatory power of Lintner´s model must be specified under different regimes, i.e., fixed versus floating exchange rates. Lintner´s model was found to have different explanatory power under fixed and floating exchange rates.

The third phase focused on the effect of exchange rates, interest rates, and inflation rates in Canada and the U.S. in explaining the dividend policy of the U.S. owned Canadian subsidiaries. This was accomplished by extending or modifying Lintner´s partial adjustment model. The results obtained did not support the hypothesis that the exchange rates are important in explaining the dividend policy of the U.S. owned Canadian subsidiaries. However, Canadian interest rates were found to be important and could enter into Lintner´s model to better explain the dividend payment behavior of U.S. owned Canadian subsidiaries.

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C H A P T E R I

INTRODUCTION

Multinational corporations (here after MNCs) are playing a greater role in world trade. [1] One of the characteristics of the multinational corporation is that it involves the allocation of resources among countries.[2] It is an international conduit not only for the financial flows [3] but also for the transfer of raw materials, semifinished and finished consumer goods, capital goods, labor services, and technological know-how. These packages of transactions tend to confer greater monopoly power than do single transactions. The ability to take advantage of these intracorporate global transactions is potentially advantageous to the MNC.

In the multinational financial system, MNCs have greater control over the mode and timing of the financial transfers than do domestic firms. For example, funds can be moved from one unit to another by adjusting the transfer prices on intracorporate sales and purchases of goods and services. Capital may be sent overseas as debt or equity depending on such factors as interest rates,

currency denomination, and official reserves positions.

In summary, the channels (techniques) available to the MNC for moving funds or profits internationally include :

A) Transfer prices, [4] B) Reinvoicing centers, [5] C) Fees and royalties, D) Leading and lagging, [6] E) Intracorporate loans,[7] F) Shifting compensating balance, [8] G) Dividends, H) Debt versus equity investment, [9] and I) Choice of invoicing currency.[10]

Dividends are probably the most common method by which multinational corporations cause funds to be transferred from foreign affiliates to parent company. It is arguably the most straightforward and the most in keeping with the traditional concepts of corporate ownership.

The aim of this study is to identify models of behavior which explain the dividend policy of U.S. owned foreign subsidiaries from 1964 to 1982. Specifically, this study is focused on the intracompany dividend payment behavior from U.S. owned Canadian subsidiaries to their U.S. parent companies. The dividend payment behavior within a multinational corporate organization may be different from the dividend payment behavior between the corporate organization and the financial markets. The basic differences of intracompany dividend

policy from a domestic company´s dividend policy are : first, dividends from foreign subsidiaries to parent company are not direct disbursement to the individual stockholders; second, dividends are received in terms of foreign currency hence an extra risk factor is attached to the repatriated dividends; third, the dividend payment on the market literature is more concerned with market reactions to the stock price resulting from the dividend payment variations. The intracompany dividend payment literature emphasizes the agreement that this payment is a necessary and legitimate business expense.

Intracompany dividends are paid every period to demonstrate a continuing policy to the local government and central bank. Some multinational companies even set a uniform dividend payout ratio throughout the corporate system to set a global pattern and maintain the principle that the subsidiaries have an obligation to pay dividends to their corporate stockholders. As a result, intracompany dividends have a more stable record of payments than dividends to the markets. Further, the complexity of factors which influence the multinational form of organization would appear to have a direct bearing on the choice of dividend policy depending on the current conditions in the world.

C H A P T E R II

LITERATURE REVIEW

II-1 Business Literature on Dividend Policy

Dividend policy is one of the most important policy decisions in financial management. A dividend decision is closely related to a firm´s financing decision because every dollar paid out in dividends is a dollar less available to satisfy the financing requirements of the firm´s operations. If dividend policy were strictly a financing decision, however, there would be no need to treat it separately. One reason it is addressed separately is a belief that dividends may represent more than a residual decision. They may affect the value of the firm apart from the financing decision.

For a company with a large growth potential, there is typically a need to finance externally. This is true for the firm as a whole or for each individual component of the firm. The equity base of the firm or of the individual component must be built either through retention of earnings, the sale of common stock, or the sale of additional debt. Because of floatation costs,

the retention of earning is usually "cheaper". This argues for a lower dividend payout ratio. For a slowly growing firm, there is frequently a lack of suitable investments, so external equity and/or debt needs are relatively low. Given this situation, the firm may be justified in paying out a higher proportion of its earnings.

The intracompany dividend policy may affect the firm´s tax payments and in the case of the U.S. firm it may affect the taxes paid by its shareholders. Dividends received by the taxable investor may be taxed as ordinary income, whereas capital gains on shares held for more than one year are taxed at a preferential rate. In the case of the tax exempt investors, there may be other reasons for the dividend preference. [11]

When managers decide on the dividend payment, their primary concerns seem to be to give shareholders a reasonable level of dividends. It is believed that most managers have a conscious or subconcious long-term target payout rate. [12] However, if firms simply applied the target payout rate to each year´s earnings, dividends could fluctuate widely. In order to avoid these wide fluctuations in dividends, managers try to smooth dividend payments by moving only partway toward the target payout in a given year. Past years´ earnings as

well as expected future performance are taken into consideration when they set the dividend payments. If investors are aware of this behavior they will tend to view a large dividend increase as a sign of optimism and a cut in dividends as a sign that the management has modest expectations of future performance.

It has been well established that the sudden shifts in dividend policy can cause abrupt changes in stock price.[13] A principal reason is the information that investors read into the company's action. Given such market expectations and reactions, there is a clear case for defining the firm's target payout and making relatively slow adjustment toward it over time. If it is necessary to make a sharp increase or decrease in the dividend payment, the company should provide as much forewarning as possible and take considerable care to ensure that the action is not misinterpreted.

Subject to these conditions, a company should adopt a target payout ratio that is sufficiently low so as to minimize future variations in the level of dividends. In addition, the target payout ratio should be set in consonance with growth expectations and related needs for capital investment or possibly the repurchase of stock. If we hold the company's investment policy constant, then the dividend policy is a trade-off between the cash

dividends and the issue or repurchase of common stock.

A common - though not universal - view is that higher dividend payment will cause higher share price. There is a natural clientele for the high dividend payment stocks. But given the market imperfections where the tax rate on dividends is higher than on capital gains, investors would require a higher before tax return on high-payout stocks to compensate for their tax disadvantage. High-income investors would tend to gravitate toward the low-payout ratio firms. This view is called the clientele effect. However, clientele theory (view) is silent on the question why some firms continue to distribute such large sums contrary to the preference of investors.

The theories on the dividend payment behavior are categorized in TABLE 1 and examined as follows.

TABLE 1

OVERVIEW OF CORPORATE DIVIDEND THEORY

IRRELEVANCY THEORY
- Because of :
  - Homemade Dividends
  - Residual Theory of Dividends
  - Clientele Effects
    - Modigliani and Miller (1961)
    - Higgins (1972)
    - Black and Scholes (1974)
    - Miller and Scholes (1978, 82)
    - (Clientele Effects)
    - Elton and Gruber (1970)
    - Pettit (1977)
    - Kwan (1981)

RELEVANCY THEORY

0% Payout Bias
- Because of :
  - Two-Birds-In-Bush Arguement
  - Lower Capital Gain Tax Rates
  - Floatation Costs in Issuing New Stocks
    - Farrer and Sewlyen (1967)
    - Brennan (1970)
    - Litzenberger & Ramaswamy (1979,80,82)

100% Payout Bias
- Because of :
  - One-Bird-In-Hand Arguement
  - Transaction Costs in Buying and Selling Shares
  - Institutional Demand
    - Graham and Dodd (1951)
    - Gordon (1959)

OPTIMUM DIVIDEND THEORY
- Because of :
  - Information Effect on Stock Price
  - Signalling Effect on Stock Price
  - Agency Theory
    - Pettit (1972)
    - Watts (1973)
    - Ross (1977)
    - Bhattacharya (1979)
    - Rozeff (1982)

TABLE 1, cont.

STOCK REPURCHASE THEORY
- Because of :
  - The Information or Signalling Hypothesis
  - Leverage Hypothesis
  - Dividend Tax Avoidance Hypothesis
  - Bondholder Expropriation Hypothesis
  - Wealth Transfers among Shareholders
    - Masulis (1980)
    - Vermaelen (1981)
    - Dann (1981)

HISTORICAL DIVIDEND PAYMENT MODEL OF BEHAVIOR
- Dividends to the market
  - Lintner (1956) (period 1918-1941)
  - Brittain (1966) (period 1942-1960)
  - Fama & Babiak (1968) (period 1946-1964)
  - Djarraya (1980) (period 1962-1978)
- Intracompany Dividends
  - Zenoff (1966)
  - Kopits (1971)
  - Robbins & Stobaugh (1973)
  - Ness (1975)
  - Horst (1977)
  - Mutti (1981)

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(1) IRRELEVANCY THEORY

In theory, according to Miller and Modigliani (MM), the value of a firm is determined solely by the firm´s investments. Dividend payouts are a detail of the firm´s given investment policy and do not directly influence the firm´s market value.

MM argue that investors are (or should be) indifferent to the payment of dividends because dividends are irrelevant to the value of the firm. This irrelevancy (or indifference) theory holds that if the firm pays no dividends, the stockholder may create "homemade" dividends by selling a portion of the stocks held, or if the firm paid out all earnings in dividends, the stockholder could use the dividends to purchase additional shares. Thus, the value can be neither created nor destroyed through dividend policy.

But the critical assumptions of this theory are (1) no taxes, (2) no floatation costs, and (3) no brokerage fees. In actuality, market imperfections such as taxes, transaction costs, and inconvenience costs impede such "homemade" dividend actions.

Though the MM irrelevancy propositon requires only that dividend payout not affect investment decisions, the

opposite possibility is not ruled out by MM. That is, investment decisions can affect dividends. For example, the firm may simply choose to treat dividends as a residual payout after all profitable investment projects have been undertaken. This is not inconsistent with MM proposition that the value is not affected by the dividend policy.

Although many firms follow a "passive residual" dividend policy, these firms may strive to maintain a stable dividend record. Most practioners believe that dividends are important because they help to resolve uncertainty for investors. Futhermore, in the "real" world, transaction costs associated with raising new external funds are significant. A policy of retaining a greater proportion of earnings when the firm has a large number of attractive investment opportunities is likely to be a wealth maximizing strategy.

The broad objectives of dividend policy are to maximize owners´ wealth. This policy should maximize the wealth over the long run while providing sufficient financing for the firm to invest in acceptable projects. These objectives are not mutually exclusive, but rather, they are closely related since both the payment of dividends and the investment in attractive projects contribute to the long-run maximization of the owners´

wealth. The important point is that the firm views dividends not as a residual but as an active decision variable.

In the case of intracompany dividends, this argument makes even more sense because the source of dividends and the recipients are part of the same organization. Also, multinational corporations view the dividend payment as a means of transferring earnings. They may place strategic importances on the intracompany dividend policy.

(2) SIGNALING HYPOTHESIS

If the Miller and Modigliani (MM) proposition that dividend policy is irrelevant to the value of the firm is true, how can the "irrelevant" ("passive residual") view of dividend policy be reconciled with the tendency of most firms to maintain a consistent or steadily growing dividend payment records? No one has yet successfully explained the cross-sectional differences in dividend payouts across the firms.

MM recognize that dividends may provide "information content" to investors, indicating to investors what management believes future earnings prospects are likely to be. The information content of dividends is a theory

"signals" of future earnings changes. When dividends are raised, this is interpreted by investors that management expects higher levels of future earnings. Therefore, if a firm´s stock price increases with a dividend increase, the reason may not be investors´ preference for dividends but expectations of higher future earnings.

In empirical studies of the signalling hypothesis of dividends, the question generally asked is; "does the announcement of a dividend really affect share prices?" A pathfindings study in this area was made by Fama, Fisher, Jensen and Roll (1969). They investigated the impact of stock splits on shareholder´s wealth in relation to market efficiency. They speculated that the stock splits might be interpreted by investors as a message about future changes in the firm´s expected cash flows. They hypothesized that stock splits might be interpreted as a message about future dividend increases, which in turn imply that the firm´s managers feel confident that they can maintain a permanently higher level of cash flows. Fama, et al, found that when stock splits were accompanied by dividend announcement there was an increase in the adjusted share prices for the group which announced the dividend increases and a decline in share prices for the dividend decrease group.

Pettit(1972, 1976) supported the proposition that

the market uses the dividend announcement as the information for assessing the share price. Using CAR (Cumulative Average Residuals), he found that substantial information is conveyed by the announcement of the dividend changes. The problem of Pettit´s study was that he used expected dividend changes rather than unexpected dividend changes.

Watts´ study (1973) found a positive dividend announcement effect on the value of the firm but concluded that it was not economically significant. He used Fama and Babiak´s (1968) dividend payment model, and market models. Watts´ measurement was the API (Abnormal Performance Index) which measured departures from the risk-adjusted rate of return of the market model. The API for a security is computed as the product of its one-month abnormal returns. [14] The performance of firms with the dividend increases is better than that of firms with the dividend decreases, but the greatest difference between the two samples in the six months preceding dividend changes and dividend announcement is trivial in the month of dividends.

Ross (1977) found two problems in MM´s dividend irrelevancy proposition. They are : (1) the market "knows" the random return stream of the firm, and (2) the market values this stream to set the value of the firm

(here, actual risk is dealt with more than perceived risk). Ross argued that perceived risk is more important than actual risk in valuing the firm. He also claimed that as changes in the financial structure may influence perceived risk, changes in the dividend payout likewise may influence perceived risk. Hence, an increase in dividends is a signal that the firm expects sufficient future cash flows.

Bhattacharya (1979) argued for the signalling approach in the sense that an unexpected dividend increase will be a favorable sign in spite of the tax disadvantage. Thus, dividends convey information on the value of the firm which can not be communicated by other means such as annual reports and earnings forecasts.

Kwan (1981) improved Pettit's study by forming portfolios based on the unexpected dividend changes and his result supported the information content of the dividend relevancy hypothesis. He found statistically significant abnormal returns when the firms announced unexpectedly large dividend changes.

Rozeff (1981) suggests that an optimal dividend policy may exist even though we ignore tax considerations. Paying dividends has a tradeoff : the benefit of reducing agency costs [15] and the cost of raising external floatation cost. He argues that

wealth-maximizing firms adopt an optimal bonding/monitoring policy which minimizes agency cost, and that the dividend payment serves as a means of bonding/monitoring performance.

In the case of the intracompany dividend payment, the "signalling" arguments do not seem relevant, either because the information is not available to the market or because the firm is making the dividend decision based on budgetary or strategic considerations.

(3) CLIENTELE EFFECTS

The "clientele effect" is the tendency of a publicly-held firm to attract those investors whose dividend preferences correspond to the dividend policy of the firm. If management modifies a firm's dividend policy, it takes the risks associated with a change in the common stock price while a change in its stockholder clientele takes place. The stockholders who preferred the previous dividend policy may sell the stock, driving down its price for a period of time until the buyers preferring the new policy are attracted to the stock. Thus, those companies with high dividends will have a clientele of investors with lower marginal tax rates and strong desires for current income. Similiarly, those

companies with low dividends will attract a clientele of investors with little need for the current income, and who often have high marginal tax rates. The clientele effect was first used by MM (1961) to argue for the irrelevancy of the dividend payout to the value of the firm.

Elton and Gruber (1970) attempted to present and test a method of determining marginal stockholder tax brackets and to explore the implications of their findings for corporate investment policy, corporate dividend policy, and the assumption of market rationality. With relation to dividend policy, they emphasized the importance of marginal stockholder tax brackets as follows: [16]

> Knowledge of marginal stockholder brackets will also allow us to draw inferences about the importance of dividend policy. Such inference could be made if we find a strong relationship between corporate dividend policy and investment tax rates. The establishment of this relationship would provide evidence that supports the clientele effect of Miller and Modigliani (each firm is assumed to have a body of stockholders who find dividend policy optimum). Further, such a finding means that a change in dividend policy might cause a change in clientele and this could be costly.

Noting that the implied tax bracket decreases when dividend payout increases, Elton and Gruber conclude that the evidence supports Modigliani´s and Miller´s clientele effect, suggesting that a change in dividend policy could

cause a costly change in shareholder wealth. Drawbacks in their study are:

1) Arbitrage may be carried out by the traders who do not own the stock initially.

2) No transaction costs were assumed.

3) Tax-free investors should be considered.

Pettit (1977) has tested for the clientele effects by examining the portfolio positions of the individual accounts handled by a brokerage house. He found the clientele effect by arguing that the stocks with low dividend yields would be preferred by the investors with high income.

Lewellen, Stanley, Lease and Schlarbaum (1978) reached a different conclusion from Pettit. They found very weak clientele effects and concluded: [17]

> Thus, even though high-income investors might, all other things equal, tend to prefer low-dividend-yield equities, these other things are not entirely equal. Risk appetites, transaction costs, diversification needs-and perhaps perceived opportunities to exploit transitory discrepancies-can easily lead investors to select (and retain) stocks from the full spectrum of dividend-paying categories in arranging their ongoing portfolios. As a result, there may well be no substantial tax-rate specialization within securities yield class after all, and that is what is required for a firm to think seriously about targeting its dividend and/or investment policies at a specific shareholder subset. We certainly find no indication of such intense specialization. The investor/owner marginal tax rate array displays ample representation in all rate brackets, and is in fact quite similar across companies, regardless of their dividend-yield attributes. Presumably, therefore, other aspects of the individual security-selection process are as

important as the pure tax effect.

Basically the clientele effect was developed to explain the difference in preferring high or low dividend payment stocks based on the different marginal tax rates of investors. The clientele effect may be relevant for intracompany dividend policy in relation to host country corporate tax rates and home country tax rates on repatriated income. When the sum of the foreign corporate income tax rates and withholding tax rates on repatriated dividends is greater than the U.S. income tax rate, the dividend payment is maximized in order to take advantage of the double tax relief. Contrary to the case above, the dividend payment is minimized because the parent firm can claim the double tax relief only to the amount of taxes paid on earnings. [18]

(4) STOCK REPURCHASE

In a stock repurchase, a company purchases its own stock either in the open market or through a tender offer. Repurchasing the shares is a way of passing cash directly to the shareholders who sell their shares back to the firm. Two competing hypotheses capable of exploiting stock repurchase at premium have received attention in the literature.

First, the managerial entrenchment hypothesis predicts that non-participating stockholders suffer wealth losses when incumbent management acts to deter a credible threat of control transfer posed by a substantial stockholder. The competing interests prediction is that non-participating stockholders gain because the reduced threat of competition for control leads to real resource savings associated with the process of competition. [19]

If earnings remain constant, the result of a repurchase is to raise the per share earnings on those shares remaining outstanding since there will be less shares having a claim on the same amount of earnings. Since less shares will own the same firm, the value of each share should rise accordingly. In other words, the repurchase or retirement of common stock can be viewed as a type of reverse dilution since the earnings per share and market value of stock are increased by reducing the number of shares outstanding.

Tender offers for stock repurchase are related to the information signal hypothesis from the results reported by Dann (1981) and Vermaelen (1981). After testing for various hypotheses, Dann and Vermaelen reported significant abnormal returns of approximately 15 percent (on the average) after repurchase tender offer

announcements and conclude that disclosure of new information is the principle explanation of this value increase.

There may be tax incentive for stock repurchase which is not found in cash dividends. The tender for stock repurchase will be taxed as a capital gain rather than a dividend if the repurchase is substantially disproportionate to the extent that the individual shareholder must have sold more than 20% of his holdings in the tender offer.[20]

(5) Historical payout model

In the 1950s, John Lintner interviewed with 28 selected companies from a list of 600 matured corporations in order to investigate their thinking on the determination of dividend policy. The results of these interviews lead Lintner to develop and test a dividend model based on the partial adjustment model. Suppose that a firm always stuck to its target payout ratio. Then the dividend per share in the coming year (D_1) would be a constant proportion of earnings per share (E_1) ;

D^*_1 = target dividend per share

D^*_1 = target ratio x E_1

The dividend change would equal

$$D_1 - D_0 = \text{target change}$$

$$= r \; E_1 - D_0,$$

where

D_0 = previous year's dividend per share

D_1 = current year's dividend per share

E_1 = current year's earnings per share.

r = target ratio

A firm that attempts to maintain its payout ratio would have to change its dividend whenever the earnings changed. But the managers would be reluctant to do this if they believe that shareholders prefer a stable progression of dividends. Therefore even if the circumstances appeared to warrant a large increase in their company's dividends, they would move only partway toward their target payment. Their dividend change therefore seemed to conform to the following mode.

$$D_1 - D_0 = \text{adjustment rate x target change}$$

$$= c \; (\; r \; E_1 - D_0)$$

where

c = adjustment rate.

The more conservative the company, the more slowly it

would move toward its target dividends and, therefore, the lower would be its adjustment rate, while the more aggressive the company the more quickly it would move toward the target dividends hence the higher would be its adjustment rate.

If we use another notation, we have the following dividend payout model.

(1) $D^*_t = rE_t$

(2) $D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + U_t$

Substituting (1) into (2) yields

(3) $D_t - D_{t-1} = a + crE_t - cD_{t-1} + U_t$

Alternatively,

(4) $D_t = a + cr\ E_t + (1-c)D_{t-1} + U_t$

where U_t is error term.

The model implies that dividends depend in part on the firm´s current earnings and in part on the dividends for the previous year, which in turn depends on that year´s earnings and the dividends in the year before.

The constant term "a" was added to Lintner´s model to test whether managers have greater reluctance to cut dividends than to raise them. The probability of an increase in dividends should be greatest when current earnings have increased ; it should be somewhat less when only the earnings from the previous year have increased and so on.

Upon fitting the equation to annual data from 1918 through 1941, Lintner found that the model explained 85% of the changes in dividends for his sample of companies.[21] The average speed of adjustment in the equation was approximately 30% per year and the target payout was 50% of earnings.

Empirical evidence by Fama and Babiak (1968) shows that a lagged dependent variable used as an explanatory variable is appropriate because the effect of a given change in earnings on the dividend stream declines over time. They investigated many different models for explaining dividend behavior using a sample of 201 firms with 18 years of data (1947-1964). They examined the results obtained when various dividend models are used to predict the changes in dividend per share paid by individual firms during 1965. The evidence suggests that for a majority of firms models with the constant suppressed provide better predictions of dividend changes

than models in which the value of the constant is left completelely free. They ranked various models by size of average absolute error. The average absolute error criterion provided a much more even weighting of individual prediction errors than either mean square error or interfractile ranges. They concluded as follows: [22]

> The two variable Lintner model including a constant term, D_{t-1}, and E_t performed well relative to other models; in general, however, deleting the constant, and adding the lagged profits variable E_{t-1} leads to a slight improvement in the predictive power of the model.

II-2 Dividend Remittance Behavior of MNCs

David B. Zenoff (1966) attempted to account for the repatriation of income from the foreign U.S. affiliates operating in Europe by extending Lintner´s stable payout hypothesis (1956). The stable payout hypothesis applied to the MNC states that the repatriation of earnings from the affiliates is a function of current earnings and past remittances. Specifically, Zenoff cited three possible determinants of the affiliate dividend policy; tax rate both of home country and of host country, political risk, and foreign exchange risk.

George F. Kopits (1971) pointed out two significant problems in the dividend remittance behavior of MNC. First, the foreign subsidiary dividends are equity transfers within the same international firm rather than disbursements to the individual stockholders who presumably expect a steady flow of dividends. Secondly, the foreign subsidiaries tend to finance capital expansion through retained earnings. He tried to explain the repatriation of foreign subsidiary earnings within the context of a well-defined optimizing behavior of the international firm. But owing to data limitations, he investigated the tax impact on only one -although major- component of intracorporate financial flows, namely, the repatriation of subsidiary earnings. He postulated that the subsidiary dividends are determined residually by the demand for and supply of investable internal funds, represented respectively, by the changes in the value of the equilibrium capital stock and by the after-tax earnings. Thus, a rise in the home tax rate would depress the dividend remittances through the cost of capital, while a rise in the host tax rate would have a dual effect on dividends : an increase, through the cost of capital, and a fall, through the level of earnings. Kopits estimated the dividend equation using weighted least-squares regressions on the cross sectional data for

1962 for U.S. controlled foreign subsidiaries, aggregated by host country. The tax effect, transmitted through the rental cost of capital, was confirmed for the manufacturing subsidiaries established in the developed host countries. In addition to the average realized home and host tax rates, there was also a strong response to the split system of taxation present in certain host countries (Belgium, the Federal Republic of Germany, and Japan). By the split system we mean the tax system with high corporate tax rate (50-52%) on retained earnings and low tax rate (15-23%) on dividends. By implication, the size of elasticities of the dividend remittance suggests that the taxation is a powerful tool in influencing the direct investment flows to the industrial countries. A major problem in Kopits´ study can be pointed out. The flow of direct investment(GKO) can be broken down into its component parts, i.e., the net capital outflow from the parent company (NKO) and the parent company share of retained earnings of the foreign affiliates (RE) which is the difference between the affiliate´s earnings (NI) and the repatriated dividends (DIV). Kopits does not include net capital outflow from the parent company (NKO).

Robbins and Stobaugh (1973), in their survey of the multinational firm financial practice, found some other factors which influence the foreign affiliate dividend

practice. The factors are age and size of affiliates, availability of funds, and joint venture partners. Older affiliates provide a great share of their earnings to the parent, presumably because as the affiliate matures, it has lessened reinvestment opportunities while at the same time the marginal returns in newer locations of the world are greater. With regard to size, Robbins and Stobaugh found that small firms are less likely to have established any underlying principles for determining the dividend policy. The availability of internally generated funds also affects the dividend policy of the foreign subsidiaries. Some affiliates must borrow to continue an established dividend policy. Existence of joint-venture partners or of local minority interest is also an important factor influencing the dividend policy. Robbins and Stobaugh found the evidence that the local stock ownership leads toward more stable dividend payments regardless of earnings.

In an attempt to explain the retained earnings of the foreign subsidiaries, Walter Ness (1975) formulated a model in which the retention rate is a function of the ratio of direct investment to gross national product, the changes in the foreign exchange rates, and the opportunity cost of internal funds. Upon applying ordinary least squares to 1969-71 cross sectional

observations on the U.S. manufacturing direct investments in 19 major host countries, Ness found that the taxation does affect the retention rate ; an increment in the home tax rate leads to a rise in retained earnings, whereas a hike in the host tax rate reduces the retention. Further, the evidence indicated that the U.S. foreign subsidiaries make use of excess foreign tax credits by electing the overall limitation rather than the pre-country limitation.

A shortcoming common to the study of the foreign affiliate´s financial behavior is the analysis of dividends or retained earnings of the foreign subsidiaries in isolation. Ladenson (1972) employed a balance sheet approach, making an improvement in this respect. A model of the determinants of the rate of foreign direct investments and interactions of a number of asset and liability changes is examined. Five uses of funds (fixed investment expenditures, change in inventories, change in receivables, change in others assets, and dividends) are identified with two sources of funds (funds from the home country, and funds raised abroad). The sources and uses of funds (balance-sheet changes) identity with five assets and two liabilities is postulated with a vector of equilibrium values towards which the model adjusts along the conventional

stock-adjustment lines. In a set of seven reduced form equations, each flow of funds is specified as a function of three exogenous variables which are the level of affiliate sales, the difference between home and host tax rates, and the difference between home and host country central bank discount rates. Each question was estimated by ordinary least squares on annual data for 1957-65 on the U.S. direct investment pooled across major geographic regions (Canada, Latin America, Europe, and the rest of the world). Contrary to a priori expectations, the structural coefficient of the tax rate differential in the dividend equation is positive. Estimation of the reduced form parameters precludes the calculation of the significance of the tax variable coefficients. Ladenson approach basically attempts to treat direct investment flows from the perspective of an unconstrained portfolio investor allocating the balance sheet items as a function of tax and interest-rate differentials and sales. But his model is left open to the criticism with regard to the specification of the exogenous variables and more seriously, to the measurement of the underlying data. In any event, the failure of the model to corroborate the effect of taxation (at least on subsidiary dividends) is no surprise, given the regional aggregation of statutary

host tax rates.

Horst (1977) analyzed the impact of tax rate on the investment and financial decisions of the MNC. In his model, the firm has three control variables at its disposal; investment in parent assets, investment in subsidiary assets, and net capital outflow from the parent to the foreign subsidiary. The optimal level of each variable is derived from the objective function (maximization of the MNC´s consolidated global after-tax earnings). Horst made changes in the standard formulation by specifying the mix of intracorporate equity and debt within the net capital outflow, thereby distinguishing between the taxation of subsidiary income and of deductible interest remittances. Also, he explicitly introduced the availiability of excess foreign tax credits to the firm under the credit limitation. But in this study, the retained earnings and dividends of the subsidiary are assumed to be a constant relationship to after-tax earnings without regard to the level of desired capital formation. Also the level of external borrowing is determined in the model by the firm´s excess demand for finance, that is, the gap between its internal use (desired investment outlays) and sources of funds (retained earnings and net capital outflow), and by

upward-sloping curves for the supply of outside funds.

Mutti (1981) examined empirically the influence of the U.S. and foreign tax laws on the repatriation practices of the U.S. - based multinational corporations. Attention is paid to the total funds repatriated and the way these funds might be divided among dividends, interest payments, and royalities and overhead charges. With respect to the repatriation of dividends, when the parent firm is in a deficit credit position and the foreign corporate income tax rate exceeds the U.S. income tax rate, dividends received should be maximized. In the contrary case, where the U.S. corporate income tax rate is higher, the dividend inflow should be minimized. In this case, the repatriation of dividends to the United States imposes an immediate additional tax liability on the firm. This view is different from Adler´s view. According to Adler (1979), the repatriation of dividends should be minimized regardless of whether dividends are brought back from a high-tax country or a low-tax country, because the foreign withholding taxes imposed on those dividend flows increase the firm´s total world wide tax payments. If dividends are not repatriated, the firm´s consolidated cash flow will be greater since the withholding taxes are avoided.

Recently Gilman (1981), concerned with foreign

exchange risk and the liability structures of the subsidiaries' balance sheets, found that the foreign currency financing is more closely related to the changes in the subsidiaries' total assets, implying that all assets abroad are viewed as subject to the risk of exchange rate changes. The focus of his study was on the determinants of the net capital flow in home currency and the borrowing in foreign currency. But he raised the question whether the distributed profits (repatriated earnings) could be endogenized separately to yield a decision rule for the dividend payments to the head office.

C H A P T E R III

RESEARCH QUESTIONS

III-1 Importance of Topic

The objective of this study is to investigate models of behavior which explain the dividend policy of the U.S. owned foreign subsidiaries historically and cross-sectionally, and to examine the differences in the dividend payment behavior of U.S. owned foreign subsidiaries in different host countries.

As indicated earlier, the channels (techniques) available to the MNCs for moving funds or profits internationally include the followings:
A) Transfer prices, B) Reinvoicing centers, C) Fees and royalties, D) Leading and lagging, E) Intracorporate loans, F) Shifting compensating balance, G) Dividends, H) Debt versus equity investment, and I) Choice of invoicing currency.
Among the channels, dividends are probably the most important and common means of transferring the profits from subsidiaries to the parent companies.

The dividend payment behavior of the U.S.

corporations was first explained by Lintner (1956) who found that dividends depend in part on the firm´s current earnings and in part on the past dividends. The research question is : Can Lintner´s model explain the behavior of earnings from U.S. owned foreign subsidiaries to their U.S. parent? In the international setting many factors such as the exchange rates, host and home country corporation income tax, withholding tax, inflation rates, interest rates, currency control, parent company´s target dividend payout ratio and the degree of ownership may also influence the repatriation of earnings from the foreign subsidiaries to the parent company, thereby changing the explanatory power of Lintner´s model.

In practice, most of the U.S. owned foreign subsidiaries were believed by many business practitioners to be willing to accelerate their dividend payments when they anticipate a devaluation of host country currency in order to protect their dividends. It was also found [23] that local equity participation tended to result in a more stable dividend record because these shareholders expected to receive a designated return on their equity investment regardless of the earnings.

A previous study [24] showed that a substantial part of total financing of the U.S. owned foreign subsidiary came from the retained earnings, depreciation and

depletion allowances. As a result, changes in depreciation may influence intertemporal changes in dividends. If we consider some of the several factors referred to above in Lintner´s model, we may better explain the dividend payment behavior of the U.S. owned foreign subsidiaries.

One of the basic techniques in relation to dividend remittance is either to speed up dividend remittance to the parent companies from the foreign subsidiaries in the case of U.S. dollar revaluation or to delay (reduce) dividend remittance to the parent companies in the case of U.S. dollar devaluation. The addition of an exchange rate variable may improve the explanatory power of Lintner´s model.

If the interest rates were to go up in a host country, the increase would make retained earnings a relatively more attractive way of financing a new investment. Consequently, the dividend payment might be expected to decline. On the other hand, the lower interest rates in the host country would reflect the increased availability of funds in the market and enhance the ability of a given income stream to support debt. This argument might suggest equal or higher dividend payment. Also the U.S. interest rates may affect the dividend payment behavior of the U.S. owned foreign

subsidiaries. To investigate this payment behavior of foreign subsidiaries in relation to the interest rates of the host countries and the U.S. interest rates, in a similar fashion to incorporating the exchange rates, various forms of the interest rates can enter into a modified lagged adjustment model.

III-2 Variables

The dependent variable in both the cross-sectional and time series study is the level and change of dividends per share. Dividends of foreign subsidiaries paid out of net income are not directly distributed to the stockholders of the parent company. Dividends from foreign subsidiaries are repatriated to the parent company where the repatriated income is treated as income in the consolidated income statement of the parent company. In the case of joint venture, of course, a part of dividends of foreign subsidiaries is directly distributed to the local shareholders. This may have an effect on the dividend decision of the subsidiary. Total dividends of a foreign subsidiary are defined as the sum of dividend amounts given to the local equity shareholders and to the U.S. parent, and is the basis of

calculating the payout ratio (Total Dividends / Net Income) of foreign subsidiary. Dividends of foreign subsidiaries are subject to withholding taxes by the host government. The gross dividends are the dividends given to the parent company including these foreign withholding tax amounts while the net dividends do not include foreign withholding tax amounts. The income statements of the U.S. owned foreign subsidiaries show the total dividends only in host country currencies.

The independent variables in both the cross-sectional and time-series studies are the factors which influence the dividend payment of the U.S. owned foreign subsidiaries. The factors are as follows.

1. Net Income
2. Depreciation
3. Tax Rates (corporate income tax & withholding tax rate)
4. Exchange Rates (annual average spot rate or end of period rate)
5. Inflation Rates
6. Interest Rates
7. Parent Company´s Payout Ratio
8. Degree of Equity Ownership

The details of each factor are explained below.

(1) Net Income

Net Income is earnings or profits after host country corporate income taxes. These earnings or profits net of the foreign corporate income taxes are the basis of calculating the foreign subsidiaries´ payout ratio. TABLE 2 illustrates the net income, total dividends, gross dividends before deduction of the foreign withholding taxes, and net dividends to be received by the U.S. parent company. It should be noted that dividends to be included in the U.S. consolidated income statement are the net dividends received plus withholding taxes plus deemed paid taxes. In TABLE 2, the foreign dividends to be included in the consolidated income statement of U.S. parent company are $36.44 ($18.72 + $17.72). [25]

TABLE 2

Net Income and Dividends of
U.S. owned Canadian subsidiaries

U.S. equity ownership = 90%
Dividend Payout Ratio = 40%
Canada Corporate Income Tax Rate = 48%
Withholding Tax Rate on Repatriated Dividends = 15%

Units : U.S. $

Profits before Canadian Tax	$100.00
Canadian Corporate Tax at 48%	48.00
Net Income	52.00
Total Dividends (40% x 52)	20.80
Gross Dividends (90% x 20.8)	18.72
Withholding Tax (15% x 18.72)	2.81
Net Dividends received in U.S.	15.91

(2) Depreciation

Depreciation is a source of internally generated funds for a company. Normally the cost of funds from depreciation is considered to be smaller than the cost of new equity. New issues of common stock give rise to underwritings which result in a higher cost of equity. A substantial part of total financing of the U.S. owned foreign subsidiaries is believed to come from retained earnings, depreciation, depletion and amortization allowances. So the changes in depreciation may also influence the intertemporal change of dividends.

Brittain (1966) tried to use the cash flow (net income plus depreciation) or to use the net income and depreciation separately as the measure of the firm´s ability to pay dividends.

(3) Tax Rates

The study of the influence of taxes on the dividend payment of the U.S. owned foreign subsidiary requires an analysis of the tax treatment of the income and repatriated dividends. The host country has priority in taxing the earnings of foreign affiliates by imposing corporate income taxes and withholding taxes on the repatriation of profits. Many countries have a double taxation agreement with the United States. This means that the company can offset the payment of any local taxes against the United States tax liability on foreign earnings.

Calculating the tax benefits involved in adjusting the dividend remittances from abroad is not an easy task. For example, a U.S. owned foreign subsidiary in Canada pays a Canadian income tax of 48 percent on its profits plus a withholding tax of 15 percent on any dividends paid to the United States. (see TABLE 3)

TABLE 3

Tax Effects of Dividend Remittance (year 1973)
Assuming 100% U.S. Equity Control
Assuming 100% Dividend Payout Ratio
Canadian corporate income tax = 48%
Withholding tax on dividends = 15%
(Unit : U.S.$)

Profits before tax		$100.00
Canada corporate tax		48.00
Net income		52.00
Withholding tax (52x15%)		7.80
Received in U.S.		44.20
U.S. Corporate tax	46.00	
Less double tax relief (maximum 46.00)	46.00	
U.S. tax payable		0.00
Available for dividends (Net Dividends)		44.20

TABLE 4

Tax Effects of Dividend Remittance (year 1973)
Assuming 100% U.S. Equity Ownership
Assuming 100% Dividend Payout Ratio
Dutch corporate income tax = 36%
Withholding tax on dividends = 5%
(Unit : U.S.$)

Profits before tax		$100.00
Dutch corporate tax		36.00
Net income		64.00
Withholding tax (64x5%)		3.20
Received in U.S.		60.80
U.S. Corporate tax	46.00	
Less double tax relief (maximum 46.00)	39.20	
U.S. tax payable		6.80
Available for dividends (Net Dividends)		54.00

The example in TABLE 3 shows that the subsidiary in Canada is exempt from any additional United States tax on these dividends. The next example in TABLE 4 shows what would happen if the Dutch income tax rate is 36 percent and withholding tax rate is 5 percent. In this case the subsidiary in the Netherlands could claim double tax relief only to the amount of taxes paid in the Netherlands.

If we generalize this calculation assuming an effective host country corporate income tax rate of Tf, then each before-tax dollar of overseas income will provide (1-Tf) dollar of net income. If this net income is then repatriated in the form of dividends, with a dividend withholding tax rate of Td, the amount of money received by the parent, per dollar of the original income, will equal

$$(1-Tf)(1-Td) = 1 - (Tf + Td - Tf \times Td) = 1-TAX$$

where

$$TAX = Tf + Td - Tf \times Td.$$

After paying the U.S. taxes on the income, the parent winds up with :

1) \$.54, if $TAX = Tf + Td - Tf \times Td < .46$ and no excess foreign tax credits are available.

(This is the case of the U.S. Dutch subsidiary in the example above. Here, TAX is 39.20% (= 36% + 5% -36%

x 5%) which is less than 46%, U.S. tax rate. Hence net dividends are $54.00)

2) 1-TAX, if TAX > .46 and no excess foreign tax credits are available.

(This is the case of the U.S. Canadian subsidiary in the example above. Here TAX is 55.80% (= 48% + 15% - 48% x 15%) which is more than 46%, U.S. tax rate. Hence net dividends are $44.20 = 100 - 55.80.)

This computation becomes more complex if only some excess tax credits are available or if only a portion of the new tax credits generated can be used. If the subsidiary is operating in a high-tax country with double tax agreements, the dividend payments are not subject to additional United States taxes.

Taxes in the parent country also influence the dividend remittance decision, especially when they are higher than the taxes in the foreign country. By varying the payout ratio among its foreign subsidiaries, the corporation can reduce its tax burden.

In the developed host countries the tax rate on dividends is generally heavier than on industrial royalties or interest payments. The opposite is true in certain developing countries where royalties, interest payments, and other intracorporate service charges are being treated as the repatriation of income and are subject to the ordinary corporate tax. In either case, the overall host tax rate on dividends (i.e., the

withholding tax plus the underlying income tax) usually exceeds the host tax rate on the interests, royalties, or service charges.[26]

It may be possible to defer the United States taxes by not remitting the profits from the low-tax-rate countries. But such profits are liable to be classified as "Subpart F" income, in which case they are taxable in the United States regardless of the remittance. [27]

(4) Foreign Exchange Rates

Foreign exchange risk is defined as the variability of a firm's value that is due to the uncertain exchange rate changes. Foreign exchange exposure is defined as the degree to which a company is affected by the exchange rate changes. In making the dividend remittance decision, the firm must know what is at risk. Two kinds of foreign exchange exposures are involved in the dividend repatriation decisions from a subsidiary to parent company; accounting exposure and economic exposure.

Accounting Exposure

Accounting Exposure arises from the need, for purpose of reporting and consolidation, to convert the

results of the foreign operations from the foreign currencies to the home currency. When an exchange rate change occurs, the translation of the remitted dividends denominated in the foreign currency leads to a new value for the accounting measurement of the dollar value of the firm. The possible extent of this change in earnings is measured by the translation exposure figures. The translation exposure is just the difference between the exposed assets and exposed liabilities.

Four principal translation methods are available : the current/non current method, the monetary/non monetary method, the temporal method, and the current method. [28]

FASB-8, which was based upon the temporal method, became effective on January 1, 1976. FASB-8 estabilished the uniform standards for the translation into dollars of the foreign currency denominated financial statements and transactions for the U.S.-based multinational companies. Its principal virtue was its consistency with the generally accepted accounting practice which requires that the balance sheet items be valued (translated) according to their underlying measurement basis. Before FASB-8, many companies estabilished a reserve and were able to defer the unrealized translation gains and losses by adding them to, or charging them against, the reserve.

In that way, they generally were able to cushion the impact of sharp changes in currency values on the reported earnings.

The widespread dissatisfaction [29] over FASB-8 led, in 1981, to a proposed new translation method FASB-52. According to FASB-52, firms would use the current rate method to translate the foreign currency denominated assets and liabilities into dollars. The firms would be permitted to use the foreign currency reserve in an attempt to smooth out the earnings fluctuations caused by the currency movement. Adopted in 1984, FASB 52 is the current ruling governing the translation of the foreign subsidiary accounting records into the worldwide consolidated accounting statements.

Economic Exposure

Economic exposure is based on the possibility that the value of the firm, measured by the net present value of the firm´s expected future after tax cash flows, will change when the exchange rates change. The currency fluctuations would affect both the firm´s projected cash flows and the riskiness of those future cash flows. A change in the firm´s risk profile could cause a change in the required discount rate or cost of equity capital. The contractual foreign currency cash flows arising from

such committments as debt, long term lease, labor contracts, rents, utility charges and dividends will decrease in the home currency terms by the percentage of the foreign currency devaluation. The cash flow associated with the tax write-off of depreciable assets can have a substantial net present value, particularly for a capital-intensive corporation.

Minimizing the economic exposure involves managing a subset of a firm´s true cash flow exposure. Hedging protects a firm from unforeseen currency fluctuations. One of the basic hedging techniques in relation to the dividend remittance is either to speed up the dividend remittance to the parent from the foreign subsidiary in case of the local currency devaluation (in other words the U.S. dollar revaluation) or to delay the dividend remittance to the parent company in case of the local currency appreciation (the U.S. dollar devaluation). In practice, most firms appear to accelerate their dividend payments when they anticipate the local currency devaluation (in other words the the U.S. dollar revaluation).

(5) Inflation Rates

At first, the distinction between the nominal exchange rates and the real exchange rates has important

implications for the exposure measurement and management.

The nominal exchange rates are the rates we actually see in the market, and they are equal to the prices of one currency in terms of another. However, like the prices of goods in another year without being adjusted for the interim inflation, the nominal exchange rate changes may indicate nothing more than the reality that the countries have different inflation rates. In fact, according to the purchasing power parity, this should be the case.

The real exchange rates are defined as the nominal exchange rates adjusted for changes in the relative purchasing power of each currency since some base period. If changes in the nominal rates are fully offset by changes in the relative price levels between the two countries, then the real exchange rates remain unchanged. If the real exchange rate changes, exchange risk will result.

If the purchasing power parity holds, we would expect gains or losses from the nominal exchange rate changes to be offset over time by the effects of differences in the relative rates of inflation, thereby reducing the net impact of nominal devaluations and revaluations. The deviations from the purchasing power parity, however, will lead to the real exchange gains and

losses. In general, whenever the inflation rates differ by country but the nominal exchange rates remain fixed, then by definition the real exchange rates must change with the attendant consequences for the various economic sectors.

(6) Interest Rates

A dividend decision is the other side of a coin of financing decision because every one unit of money paid out in dividends is one unit less available to satisfy for the financing requirements of the firm´s operations. For a company whose growth in assets is great, there typically is a need to finance externaly. In addition to debt, the equity base must be built either through the retention or the sale of common stock. With floatation cost, the retention usually is "cheaper" which argues for a low dividend payout ratio.

A decline in the interest rates should result in lower cost of both debt and equity capital. This would tend to make more proposed capital investment projects acceptable, therefore requiring the larger amount of financing. This argument would support the lower dividend payout to provide the additional equity capital from the internal sources. On the other hand, the lower

interest rates would reflect the increased availibility of funds in the debt market and enchance the ability of a given income stream to support the debt. This line of reasoning might argue for the equal or higher payout ratio, relying upon the debt to finance the larger portion of the funds required by the additional capital investment.

If the interest rates were to increase, the increase would make retained earnings a relatively attractive way of financing new investments. Consequently, the payout ratio might be expected to decline.

All else being equal, a parent can set a different dividend payout ratio throughout the corporate system by setting a high dividend payout rate for the subsidiaries with relatively low opportunity costs of funds while requiring smaller dividend payments from those units facing the high borrowing costs or having the favorable investment opportunities.

The interest rate theory of exchange rate expectations (International Fisher Effect), which says that the interest differentials will be the unbiased estimations of expected currency changes, is also relevant in assessing a firm´s real exchange risk. 30

(7) Parent company target payout ratio

Two surveys, one by Robbins and Stobaugh (1973) of thirty-nine U.S. multinationals and the other by David Zenoff (1968) of thirty U.S. multinationals, revealed the importance attached to the parent company´s payout ratio in determining dividends to be received from abroad. Some firms require the same payout percentage as the parent´s ratio for each of their subsidiaries, while others set a target payout as a percentage of the overall foreign-source earnings without attempting to receive the same percentage from each subsidiary. The rationale for focusing on the parent´s payout ratio is that the subsidiaries should contribute their share of dividends paid to the stockholders. Thus, if the parent´s payout ratio is 60%, then the foreign operations should contribute 60% of their earnings toward meeting this goal. Establishing a uniform percentage from each unit, rather than an overall target, is explained as an attempt to persuade foreign governments, particularly for those of less developed countries, that these payments are necessary rather than arbitrary. MNCs are often willing to accept higher tax costs to maintain the principle that dividends are necessary and legitimate business expenses.

(8) The degree of equity ownership

The presence of local stockholders poses a major constraint on an MNC´s ability to adjust its dividend policy in accordance with the global factors. All (or majority) owned foreign subsidiaries may have more discretion in deciding the dividend payment than the minority owned subsidiaries. The distinction between majority and minority ownership is highly subjective. Usually 50% ownership has been the criteria of distinguishing the majority and monority ownership. Most of the countries tend to allow 100% ownership or more than 50% equity ownership to the foreign subsidiaries.

Robbins and Stobaugh (1973) found that the local equity participation tends to result in a more stable dividend record because these shareholders expected to receive a designated return on their equity investment regardless of the earnings. The parent company hesitated to increase its dividends for fear of the difficulty in reducing them later should the earnings decline. Conflicts with the local equity investors should arise because they demand a shorter period and more certain return while the MNC needs a higher earnings retention rate for a longer-term purpose.

C H A P T E R IV

RESEARCH DESIGN

IV-1 Hypotheses

An MNC tries to maximize the returns for the entire operations whether it is a wholly owned subsidiary or a joint venture. Earlier under fixed exchange rate system, the U.S. owned foreign subsidiaries did not need to be concerned with the effect of exchange rates on dividends repatriated to the parent companies. But under the floating exchange rates, they have become more concerned with the real value of the repatriated dividends. The dividend payment decision has been given a strategic importance in relation to fluctuating exchange rates. Also the fluctuating exchange rate periods are characterized by the high interest rates and inflation rates. Given these uncertain financial variabes under floating exchange rates, the intracompany dividend payment may not be the same as before. Even though David Zenoff´s study (1966) showed that Lintner´s model explained well the dividend payment behavior of U.S. owned foreign affiliates under fixed exchange rates,

whether Lintner´s model is still valid or not under floating exchange rates in the international setting is unknown at this stage. Lintner´s model may be misspecified, hence must have have additional variables to increase the explanatory power. Or the explanatory power of Lintner´s model must be specified under different regimes, i.e., fixed exchange rates versus floating exchange rates. The effect of the earlier mentioned variables such as exchange rates, interest rates, and inflation rates may be important, unimportant, or unknown. Thus the overall effect of the three variables needs to be studied and tested. Given this context, several hypotheses can be developed.

HYPOTHESIS I

The first hypothesis addresses the validity of Lintner´s model under floating exchange rates. As said before, David Zenoff (1966) found that Lintner´s partial adjustment model was good in explaining the dividend payment behavior of U.S. owned foreign subsidiaries, arguing that the repatriation of earnings from foreign affiliates is a function of current earnings and the past remittances. But the study was done under fixed exchange rates. Given fluctuating exchange rates, interest rates,

and inflation rates under floating exchange rates, we suspect that Lintner's model is still valid. So the null hypothesis is set as follows.

NULL HYPOTHESIS (H_O)

The U.S. owned foreign subsidiaries have the same payment behavior during the periods of fixed exchange rates and floating exchange rates.

ALTERNATIVE HYPOTHESIS (H_A)

The U.S. owned foreign subsidiaries do not have the same payment behavior during the periods of fixed exchange rates and floating exchange rates.

HYPOTHESIS II

The second hypothesis is intended to check whether the exchange rate variable can enter into Lintner's model in order to better explain the dividend payment behavior of the U.S. owned foreign subsidiaries. The hypothesis goes further to investigate a theoretical hedging technique of an forseen foreign exchange fluctuations in relation to dividend remittance. One of the basic hedging techniques in relation to the dividend remittance is to speed up the dividend remittance to the parent

company in case of U.S. dollar revaluation and to decrease it in case of U.S. dollar devaluation. So the hypothesis is stated as follows.

H_O: The U.S. owned foreign subsidiaries do not adjust their dividend payments to the exchange rates.

H_A: Devaluation of the U.S. dollars against the host country currency would reduce or delay the dividend payment of the U.S. owned foreign subsidiaries while revaluation of the U.S. dollars would raise or accelerate the dividend payment of the U.S. owned foreign subsidiaries.

HYPOTHESIS III

If the interest rates were to go up in a host country, the increase would make retained earnings as relatively attractive way of financing new investments. On the other hand, the lower interest rates would reflect the increased availability of funds in debt market and enhance the ability of a given income stream to support the debt. This line of reasoning might argue for the equal or higher dividend payment. So the hypothesis can be set up as follows.

H_0: The U.S. owned foreign subsidiaries do not adjust their dividend payments to the interest rates of host countries and the U.S. interest rates.

H_A: An increase in the interest rates of host countries would reduce or delay the dividend payment while a decrease in the interest rates would raise the dividend payment of the U.S. owned foreign subsidiaries.

IV-2 Methodology

(1) Preliminary Tests

The simple average payout ratios, standard deviations, and coefficients of variation in payout ratios between the U.S. parent companies and their foreign subsidiaries will show the basic differences or similarities in the dividend payment behavior. Large coefficients of variation for the payout ratio may imply that the subsidiaries do not have a definite target payout ratio. Next, the whole data set is divided into two groups, the periods of fixed exchange rates (1964-1972) versus the periods of floating exchange rates (1973-1982). The same calculations will be done for each of these groups.

Next, the correlation between the payout ratios of U.S. owned foreign subsidiaries and their U.S. parent companies will be calculated. High correlation might suggest that the subsidiaries follow parent companies' payout ratio while low correlation may suggest that the parent companies' payout ratio has nothing to do with their foreign subsidiaries' payout ratio.

Finally, simple correlation coefficients between net income per share (EPS) and dividends per share (DPS) of all subsidiaries during the whole period are calculated. The magnitude of correlation coefficient will show whether the level of dividends is associated with the level of earnings.

(2) Partial Adjustment Model

Following the preliminary tests, Lintner's model is evaluated. [31] Lintner's model is an application of the partial adjustment model. He concluded that most dividend decisions of a firm can be explained in terms of the following two equations.

$$(1)\ D^*_t = rE_t$$

$$(2)\ D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + U_t$$

The "desired" dividend payment D^* is determined by the net income E_t in current period and the target payout ratio **r**. It is also assumed that the level of dividend payment will move only partially from the starting position D_{t-1} to the desired position D^*_t when net income E_t increases or decreases to a new level. The move depends on the confidence of management

in maintaining the new level of dividends. Thus the change of dividends between time t and time t-1 would be equal to $\mathbf{c}(D_t - D_{t-1})$ instead of $(D_t - D_{t-1})$. The parameter **c** is the speed of adjustment coefficient, and (1-**c**) is sometimes interpreted as the safety factor for not adjusting to the desired level based on current net income. The constant term **a** in equation (2) was added by Lintner to test whether managers have greater reluctance to cut dividends than to raise them. This constant term is postulated to be positive. Therefore, the firm will not cut its dividend payments unless $c(D_t - D_{t-1})$ is less than the constant term. Finally, U_t is an error term. Substituting (1) into (2) yields

$$(3)\quad D_t - D_{t-1} = a + crE_t - cD_{t-1} + U_t$$

Alternatively,

$$(4)\quad D_t = a + cr\,E_t + (1-c)D_{t-1} + U_t$$

where U_t is an error term.

Most of the behavioral models such as (4) imply that the current dividends are a function of current earnings and past dividends. The basic lagged adjustment model in the statistical literature is as follows: [32]

$$D^*_t = a + rE_t + U_t$$

$$D_t - D_{t-1} = c(D^*_t - D_{t-1})$$

The reduced form is

$$D_t - D_{t-1} = ac + crE_t - cD_{t-1} + cU_t$$

Alternatively,

$$D_t = ac + crE_t + (1-c)D_{t-1} + cU_t$$

Here the constant term and error term are put in the desired dividend equation not in the adjustment equation.

The only difference is that in equation (4) the constant term and the error term may have simpler properties than in this case. Lintner´s partial adjustment model where the constant term and error term are put in the adjustment equation makes more sense because managers in the company are reluctant to cut dividends. And most of the study of this kind afterwards ,for example, Fama and Babiak (1968) and Djarraya (1980), used Lintner´s model as the basis of the empirical study. Hence, in the following tests Lintner´s partial adjustment model will be used to check whether it is misspecified with relation to exchange rates and interest rates in the international setting, and whether its explanatory power must be specified under different regimes, fixed versus floating exchange rates.

(3) Extension of Lintner's Model

The dividend payment of a foreign subsidiary is not distributed directly to the shareholders in the home country. It is equity transfer from the subsidiary to the parent company. When the parent company prepares its balance sheets and income statements, the company translates the dividend income [33] received from the foreign subsidiaries into the home currency-denominated income on the date of balance sheet and income statement.

Basically, one might think that in the periods of floating exchange rates the desired dividend (D*) may not be a function of one explanatory variable (E). Rather it may be a function of earnings (E) and other explanatory variables such as exchange rates, interest rates, and inflation rates of host countries. In Lintner's partial adjustment model, all the possible independent variables may enter to explain the intertemporal change of dividends of a foreign subsidiary. Suppose the optimal level of dividends depend on both the earnings levels and other independent variables. Thus at a given earnings, one might expect dividends to move more or less in step with changes in exchange rates, interest rates, and/or changes in price

levels, but to react much more slowly to earnings changes.

The dependent variable variable can be D_{t-1} or D_t. In the reduced form of equation (3), the variable D_{t-1} appears also on the right hand side of the equation, so that the same variable appears as both an independent variable and as a component of the dependent variable. This approach makes the R^2 valuse incorrect, though the estimates of coefficients and their standard errors are unaffected. The coefficient of the lagged variable D_{t-1} will be of opposite sign to the parameter of the model. The customary approach is to consolidate the variable D_{t-1} on the right hand side, so that the only variable on the left hand side is D_t.

The independent variables of exchange rates and interest rates can enter into Lintner´s model either in the form of level or in the form of changes. In the economic literature, change means flow while level means stock. The changes of each variable seem to make more sense because the corporations are more sensitive to the changes in exchange rates and interest rates than the absolute level of exchange rates and interest rates. In the following extension of Lintner´s model, when the dependent variable is level then the level of each independent variable will be used while the changes of

dependent variable will be matched to the changes of independent variable. Specifically, the independent variables, that is, exchange rates, interest rates, and inflation rates may be added to Lintner´s model in two ways. One way is to add the levels of each variable to the desired dividend equation and the other is to add the changes of each variable except inflation rates to the adjustment equation. If we put the new variables in the desired dividend equation it may imply that the new variables affect the desired dividend itself, while if we put the new variables in the adjustment equation it may imply that they affect the adjustment rate at which a foreign subsidiary moves toward the target dividend D^*.

Adding the new variables to the target dividend equation, the relevant equations are :

$$(5)\quad D^*_t = rE_t + B_3EX_t + B_4I_t + B_5\Delta P_t$$

$$(6)\quad D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + U_t$$

The reduced form is

$$(7)\quad D_t - D_{t-1} = a + crE_t - cD_{t-1} + cB_3EX_t + cB_4I_t + cB_5\Delta P_t + U_t$$

Alternatively,

$$(8)\quad D_t = a + crE_t + (1-c)D_{t-1} + cB_3EX_t + cB_4I_t + cB_5\Delta P_t + U_t$$

where EX = Annual average in units of foreign currencies per U.S. dollar,

I = Period average of treasury bill rates or short term money market rates of the host countries,

P = Annual average consumer price index of host countries,

$$\Delta P_t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

and U_t is an error term.

Adding the new variables to the adjustment equation, the relevant equations are :

$$(9) \quad D^*_t = rE_t$$

$$(10) \quad D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + B_3\Delta EX_t + B_4\Delta I_t + B_5\Delta P_t + U_t$$

The reduced form is

$$(11) \quad D_t - D_{t-1} = a + crE_t - cD_{t-1} + B_3\Delta EX_t + B_4\Delta I_t + B_5\Delta P_t + U_t$$

Alternatively,

$$(12) \quad D_t = a + crE_t + (1-c)D_{t-1} + B_3\Delta EX_t + B_4\Delta I_t + B_5\Delta P_t + U_t$$

where EX = Annual average in units of foreign currencies per U.S. dollar,

$$\Delta EX_t = \frac{EX_t - EX_{t-1}}{EX_{t-1}} \times 100$$

I = Period average of treasury bill rates or short term money market rates of the host countries,

$$\Delta I_t = I_t - I_{t-1}$$

P = Annual average consumer price index of host countries,

$$\Delta P_t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

and U_t is an error term.

Note that the reduced equation (8) is of the same form as the reduced equation (12), but has a different coefficient on the different independent variable. Both of these models will be used to test the null hypothesis II and III. Because our concern is to investigate the effect of exchange rates, interest rates, and inflation rates on the intracompany dividends, we are not only interested in the coefficient cB_3, cB_4, and cB_5 of the reduced equation (8), but in the coefficient B_3, B_4, and B_5 of the reduced equation (12).

When all the new independent variables are included in the reduced equations (8) and (12), F test associated with the analysis of variance is a test of the hypothesis that:

$$cr = 1-c = B_3 = B_4 = B_5 = 0$$

or, $$cr = 1-c = cB_3 = cB_4 = cB_5 = 0,$$

In other words, it is a test of whether there is a linear

relationship between the dependent variable and the entire set of independent variables.

After analysis of F test is done with exchange rates, interest rates, and inflation rates all in the same equation, correlation among these three variables will be checked.

(4) The Effect of Exchange Rates on the Intracompany Dividends

Specifically in order to investigate the impact of exchange rates on the intracompany dividend payment, separate model using only the exchange rate variable will be developed. The correlation between the dependent variable and other independent variables in correlation matrix will show the degree of association of exchange rates with the dividend payment.

As indicated before, one might think that in the periods of floating exchange rates the desired dividend (D^*) may not be a function of one explanatory variable (E). Rather it may be a function of earnings (E) and another explanatory variable, exchange rates. Suppose the optimal level of dividends depends on both the earnings levels and exchange rates. Thus at given earnings, one might expect dividends to move more or less

in step with exchange rates, but to react much more slowly to earnings changes. In Lintner´s dividend payment model, the foreign exchange rates may enter to explain the intertemporal change of dividends of the foreign subsidiary.

The foreign exchange rates may be added to Lintner´s model in two ways. One way is to add the level of exchange rates to the desired dividend equation and the other is to add the changes in exchange rates to the adjustment equation. If we put the new variables in the desired dividend equation it may imply that the exchange rates affect the desired dividend itself, while if we put the new variables in the adjustment equation it may imply that they affect the adjustment rate at which a foreign subsidiary moves toward the target dividend D*.

Adding the exchange rates to the target dividend equation, the relevant equations are :

(13) $D^*_t = rE_t + B_3EX_t$

(14) $D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + U_t$

The reduced form is

(15) $D_t - D_{t-1} = a + crE_t - cD_{t-1} + cB_3EX_t + U_t$

Alternatively,

(16) $D_t = a + crE_t + (1-c)D_{t-1} + cB_3EX_t + U_t$

where EX = Annual average in units of foreign

currencies per U.S. dollar,

and U_t is an error term.

Adding the changes in exchange rates to the adjustment equation, the relevant equations are :

(17) $D^*_t = rE_t$

(18) $D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + B_3 \Delta EX_t + U_t$

The reduced form is

(19) $D_t - D_{t-1} = a + crE_t - cD_{t-1} + B_3 \Delta EX_t + U_t$

Alternatively,

(20) $D_t = a + crE_t + (1-c)D_{t-1} + B_3 \Delta EX_t + U_t$

where EX = Annual average in units of foreign currencies per U.S. dollar,

$$\Delta EX_t = \frac{EX_t - EX_{t-1}}{EX_{t-1}} \times 100$$

and U_t is an error term.

Note that the reduced equation (16) is of the same form as the reduced equation (20), but has a different coefficient on the different specification of exchange rates. Both of these models will be used to test the null hypothesis II. Because our concern is to investigate the effect of exchange rates on the intracompany dividends, we are not only interested in the coefficient cB_3 of the reduced equation (16), but in

the coefficient B_3 of the reduced equation (20). Any interpretation of the absolute magnitude of the estimated parameters will be different between the two models.

An alternative specification is using multiplicative instead of additive exchange rate variable. The exchange rate variable should enter not as level of exchange rates, but rather as ratios of current exchange rate to the exchange rate of the end of fixed exchanage rate, here year 1972; thus the relevant form would be exchange rate in period t as a ratio to the exchange rate in the base year 1972. This may allow an exchange rate which rose to a new permanent level to continue to have a permanent effect. Then the effect of exchanage rate changes could affect D^* as follows:

$$(21)\quad D^*_t = aE^{r}{}_t HX^{B_3}_t$$

$$(22)\quad \frac{D_t}{D_{t-1}} = \left(\frac{D^*_t}{D_{t-1}}\right) cU_t$$

The reduced form is

$$(23)\quad \frac{D_t}{D_{t-1}} = \left(\frac{aE^{r}{}_t HX^{B_3}_t}{D_{t-1}}\right)^{c} U_t$$

If we take log on both sides, then

$$(24)\quad \log D_t - \log D_{t-1} = c(\log aE^{r}{}_t HX^{B_3}_t - \log D_{t-1}) + \log U_t$$
$$= c\log a + cr\log E_t - c\log D_{t-1} + cB_3 \log HX_t + \log U_t$$

Alternatively,

$$(25)\quad \log D_t = c\log a + cr\log E_t + (1-c)\log D_{t-1} + cB_3 \log HX_t + \log U_t$$

where EX = Annual average in units of foreign currencies per U.S. dollar,

$$HX_t = \frac{EX_t}{EX_{1972}}$$

and U_t is error term.

The reduced form of equation (25) is the same form as the reduced equation (16) except the log form. Since equation (25) is double logarithmic, the coefficients represent elasticities. Thus the short run impact of dividend with respect to the ratio of exchange rates is cB_3, while the long-run impact is to be B_3 in equation (21). Here again, the reduced form of equation (25) will be used to test the hypothesis II. The interesting point is the significance of B_3 which really measures the effect of the exchange rates on the intracompany dividend payment. So long as the coefficient B_3 is not significantly different from zero, the effect of the exchange rates may not exist.

(5) The Effect of Interest Rates on the Intracompany Dividends.

The interest rates of the host countries and U.S. also influence the dividend payment decision of the U.S.

owned foreign subsidiares. Logically the same as in the exchange rates, the desired dividends may not be just a function of one explanatory variable, that is, earnings. It may be a function of earnings and another explanatory variable, interest rates. If the optimal level of dividends depends on both the earnings and interest rates, then at given earnings dividends are expected to move more or less in step with the interest rates, but to react much more slowly to earnings changes.

As is the same as the exchange rates, the first step is to add the interest rates of host countries to the desired dividend equation of Lintner´s model.

If the interest rates of the host countries affected the desired dividend D^*, then the relevant equation would be:

$$(26)\quad D^*_t = rE_t + B_3I_t$$

$$(27)\quad D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + U_t$$

The reduced form is

$$(28)\quad D_t - D_{t-1} = a + crE_t - cD_{t-1} + cB_3I_t + U_t$$

Alternatively,

$$(29)\quad D_t = a + crE_t + (1-c)D_{t-1} + cB_3I_t + U_t$$

where I = Period average of treasury bill rates or short term money market rates of the host countries,

and U_t is an error term.

If the changes in the interest rates of the host countries affected the adjustment rate at which the subsidiaries moved toward the desired dividend D^*, then the relevant equations become:

(30) $D^*_t = rE_t$

(31) $D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + B_3\Delta I_t + U_t$

The reduced form is

(32) $D_t - D_{t-1} = a + crE_t - cD_{t-1} + B_3\Delta I_t + U_t$

Alternatively,

(33) $D_t = a + crE_t + (1-c)D_{t-1} + B_3\Delta I_t + U_t$

where I = Period average of treasury bill rates or short term money market rates of the host countries,

$\Delta I_t = I_t - I_{t-1}$

and U_t is error term.

The reduced equation (29) is of the same form as the reduced equation (33), but has a different coefficient on the changes in the interest rates. We are not only interested in the coefficient cB_3 of the reduced equation (29), but in the coefficient B_3 of the reduced equation (33). Any interpretation of the absolute

magnitude of the estimated parameters will be different between the two models.

The second approach substitudes the changes in the ratio of the interest rates in the U.S. and host countries for the host country's interest rates. The inclusion of the U.S. interest rates may make sense because of the impact of parent company decision on the dividend and investment decision of the foreign subsidiaries due to the U.S. interest rates. Then the relevant equations are:

$$(34)\quad D^*_t = aE^{r}_t J^{B_3}_t$$

$$(35)\quad \frac{D_t}{D_{t-1}} = \left(\frac{D^*_t}{D_{t-1}}\right)^c U_t$$

The reduced form is

$$(36)\quad \frac{D_t}{D_{t-1}} = \left(\frac{aE^{r}_t J^{B_3}_t}{D_{t-1}}\right)^c U_t$$

If we take log on both sides, then

$$(37)\quad \log D_t - \log D_{t-1} = c(\log aE^{r}_t J^{B_3}_t - \log D_{t-1}) + \log U_t$$

$$= c\log a + cr\log E_t - c\log D_{t-1} + cB_3 \log J_t + \log U_t$$

Alternatively,

$$(38)\quad \log D_t = c\log a + cr\log E_t + (1-c)\log D_{t-1} + cB_3 \log J_t + \log U_t$$

where J = Ratios of the host countries interest rates to the U.S. interest rates from 1972,

$$\text{that is, } J_t = \left(\frac{(I_t/I_{1972})\text{Host Country}}{(I_t/I_{1972})\text{U.S.}}\right)$$

I = Period average of treasury bill rates or short term money market rates of the host countries and the U.S.,

and U_t is an error term.

The reduced equation is the same form as the reduced equation (29), but has a different coefficient on the interest rate term. Since equation (38) is double logarithmic, the coefficients represent elasticities. Thus the short-run elasticity of dividend with respect to the relative interest rates is cB_3, while the long-run (or full adjustment) elasticity is seen from (34) to be B_3. We are interested in the significance of the coefficient cB_3 of the reduced equation (38).

Third, real interest rates of the host country, i.e., interest rates corrected for inflation, may be substituded for nominal interest rates of the host country. Nominal interest rates which we actually see in the market will not separate the influence of inflation rates on the intracompany dividend payments. Hence, real interest rates would be a good substitute solving this irretrievable problem. The real interest rates can enter into the lagged adjustment model in two ways.

i) Additive form: added to the desired dividend equation.

(39) $D^*_t = rE_t + B_3 \ RI_t$

(40) $D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + U_t$

The reduced form is

(41) $D_t - D_{t-1} = a + crE_t - cD_{t-1} + cB_3 \ RI_t + U_t$

Alternatively,

(42) $D_t = a + crE_t + (1-c)D_{t-1} + cB_3 \ RI_t + U_t$

where RI = Real interest rates of the host countries,

that is, $RI_t = I_t - \Delta P_t$,

I = Period average of treasury bill rates or short term money market rates of the host countries,

P = Annual average consumer price index of host countries,

$$\Delta P_t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

and U_t is an error term.

ii) Additive form: added to the adjustment equation.

(43) $D^*_t = rE_t$

(44) $D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + B_3 \ RI_t + U_t$

The reduced form is

$$(45)\quad D_t - D_{t-1} = a + crE_t - cD_{t-1} + B_3\, RI_t + U_t$$

Alternatively,

$$(46)\quad \bar{D}_t = a + crE_t + (1-c)D_{t-1} + B_3\, RI_t + U_t$$

where RI = Real interest rates of the host countries,

that is, $RI_t = I_t - \Delta P_t$,

I = Period average of treasury bill rates or short term money market rates of the host countries,

P = Annual average consumer price index of host countries,

$$\Delta P_t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

and U_t is an error term.

The reduced equation (42) is of the same form as the reduced form (46), but has a different coefficient on the real interest term. In order to test the effect of real interest rates on the intracompany dividend payment, both models will be chosen. Hence, we are interested not only in the coefficient cB_3 in equation (34) but also in the coefficient B_3 of the desired dividend equation (39) and the coefficient B_3 of the adjustment equation (44) which measure the effect of the real interest rates on the intracompany dividend payment. So long as the coefficient c is significantly different from zero, no

difference in interpretation of significance of statistical results occur except the absolute magnitude of the estimated parameters between the two models.

Finally, the difference of real interest rates of the host country and U.S. may be used as the interest variable. This may both cure the analytical problem caused by inflation in the two countries and consider the U.S interest rates which surely affect the dividend policy of the parent company. The difference of real interest rates can enter into the lagged adjustment model in two ways.

i) Additive form: added to the desired dividend equation.

$$(47)\quad D^*_t = rE_t + B_3\, DI_t$$

$$(48)\quad D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + U_t$$

The reduced form is

$$(49)\quad D_t - D_{t-1} = a + crE_t - cD_{t-1} + cB_3\, DI_t + U_t$$

Alternatively,

$$(50)\quad D_t = a + crE_t + (1-c)D_{t-1} + cB_3\, DI_t + U_t$$

where DI = Difference between the real interest rates of the host country and U.S.,

that is, DI = RI Canada - RI U.S.,

RI = Real interest rates,

that is, $RI_t = I_t - \Delta P_t$,

I = Period average of treasury bill rates or short term money market rates,

P = Annual average consumer price index,

$$\Delta P_t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

and U_t is an error term.

ii) Additive form: added to the adjustment equation.

(51) $D^*_t = rE_t$

(52) $D_t - D_{t-1} = a + c(D^*_t - D_{t-1}) + B_3\, DI_t + U_t$

The reduced form is

(53) $D_t - D_{t-1} = a + crE_t - cD_{t-1} + B_3\, DI_t + U_t$

Alternatively,

(54) $D_t = a + crE_t + (1-c)D_{t-1} + B_3\, DI_t + U_t$

where DI = Difference between the real interest rates of the host country and U.S.,

that is, DI = RI Canada - RI U.S.,

RI = Real interest rates,

that is, $RI_t = I_t - \Delta P_t$,

I = Period average of treasury bill rates or short term money market rates,

P = Annual average consumer price index,

$$\Delta P_t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

and U_t is an error term.

The reduced form of equation (50) is the same form as the reduced form (54), but has a different coefficient of the difference in real interest rates of Canada and U.S.. Both models will be used in order to test the hypothesis III. Hence, both the regression coefficient cB_3 in equation (50) and B_3 in equation (54) will be checked whether they are significantly different from zero or not.

C H A P T E R V

EMPIRICAL ANALYSIS

V-1 Data

(1) Sources

Relevant accounting numbers of the U.S. owned foreign subsidiaries were obtained from Moody's Industrial Manual (1964 - 1980) and Moody's International Manual (1981-1982). The data for U.S. parent companies were also from Moody's Industrial Manual (1964-1982). The sample firms are basically non-financial subsidiaries. The list of subsidiaries in Moody's Industrial Manual (specifically in the section of foreign companies) is not exhaustive; there are approximately 40 U.S. owned foreign subsidiaries listed each year in the Manual. From 1981, a separate volume of Moody's International Manual has listed more U.S. owned foreign subsidiaries than before.

The number of the U.S. subsidiaries in Canada is 29 companies. As we see in TABLE 23 of the Appendix, most subsidiaries in Canada have more than 50% equity control

and complete information on all accounting numbers during the period (1964-1982). The U.S. subsidiaries in other than Canada, however, do not have enough accounting information during the period. The number of subsidiaries in other countries than Canada is 18 and most of these subsidiaries have complete information just during 1978-1982. The non-Canadian subsidiaries are listed in TABLE 33. These insufficient number (18) of subsidiaries in other countries than Canada and the short period (1978-1982) of these subsidiaries may reduce the reliability of the analysis. Only preliminary calculation of simple facts such as average payout ratio, standard deviation of the average payout ratio, and correlation between the payout ratios of parent company and subsidiary will be made on the non-Canadian subsidiaries. Hence most of the statistical tests of hypotheses and the interpretation of the results will concentrate on the U.S. owned Canadian subsidiaries.

(2) Time Period

Annual data from 1964 to 1982 are obtained from financial statement of each subsidiary and parent company in Moody´s Industrial Manual and Moody´s International Manual. Fiscal year of each company may vary but only

those firms whose fiscal years are the same as calendar years are selected.

(3) Types of Cases

Firm specific data are obtained from the financial statement of each subsidiary and parent company. Relevant accounting numbers are as follows ;(All accounting numbers are expressed in host country currency except number of shares and ownership percentage.) 1. Net Income, 2. (Total) Dividends for common stocks, 3.Number of shares, 4. Earnings per share, 5. Dividend per share, 6. Depreciation, 7. The percentage of U.S. equity ownership.

The foreign exchange rates, interest rates, and inflation rates of host countries which influence the dividend payout of the U.S. owned foreign subsidiaries are obtained from International Financial Statistics published by IMF. All the information on these financial variables are in TABLE 38. The foreign exchange rates are period average in units of foreign currencies per U.S. dollar. The interest rates of host countries are period average short term money market rates or 90 days treasury bill rates. The inflation rates of host countries and the U.S. are measured in terms of consumer price index.

V-2 Results of Preliminary Tests

(1) Average Payout Ratio

The U.S owned Canadian subsidiaries have lower payout ratio than their U.S. parent companies. Referring to TABLE 5, the average payout ratio of all 29 U.S. owned Canadian subsidiaries during the past 18 years is 36.57%, while that of U.S. parent companies is 50.94%. But the variability (coefficient of variation) in average payout ratio of the U.S. parent companies is 1.60 which is greater than that (0.93) of the U.S. owned Canadian subsidiaries. The U.S. owned Canadian subsidiaries tend to have more stable dividend payment behavior than their U.S. parent companies.

The average payout ratio of the U.S. owned Canadian subsidiaries during the periods of fixed exchange rates is much higher than during the periods of floating exchange rates. Furthermore, during the periods of fixed exchange rates, the payout ratio is more stable than during the periods of floating exchange rates. The smaller average payout ratio and higher variability (coefficient of variation) in average payout ratio during the periods of floating exchange rates may imply that the

subsidiaries are more flexible in adjusting their dividend payment during the periods of volatile exchange rates and other factors such as exchange rates and interest rates will influence the dividend payment behavior of the foreign subsidiaries. The results of preliminary tests on the sample companies are in TABLE 26 through TABLE 29.

In order to find out whether this kind of relationship between parent companies and subsidiaries can be generalized, the U.S. owned non-Canadian subsidiaries are collected and given the same preliminary tests. As we see in TABLE 6, in contrast to the average payout ratio of the U.S. owned Canadian subsidiaries, the average payout ratio of the non Canadian subsidiaries is greater than that of their parent companies. It might be due to the fact that the data set consist of different countries and very short time periods (usually from 1978 to 1982). But it is clear that the coefficient of variation in average payout ratio of the non Canadian subsidiaries is smaller than that of parent companies. It implies that the subsidiaries have more stable dividend payment ratio than the parent companies.

Unlike the Canadian subsidiaries, however, the variability in average payout ratio of the non-Canadian subsidiaries is greater during the periods of fixed

exchange rates than during the periods of floating exchange rates. But again given so small number of observations per each country and so short periods (1978-1982) per each subsidiary, the result is somewhat suspect as sample and time specific. Even though the result here is opposite to the case of the Canadian subsidiaries, it might not be suspect that during the periods of floating exchange rates the subsidiaries tend to have higher variability in payment behavior than during the periods of fixed exchange rates. The results of preliminary tests on sample companies are in TABLE 35 through TABLE 37.

The same preliminary tests were also done on cash flow basis for the the U.S. owned Canadian subsidiaries. Depreciation, depletion, and amortization allowances are sources of funds in a company. Brittain (1966) was the first to use cash flow (net income plus depreciation, depletion, and amortization allowances) or to use net income and allowances separately as the measure of a firm´s ability to pay dividends.

As we see in TABLE 7, the average payout ratio of the U.S. owned Canadian subsidiaries on cash flow basis is lower than that of the parent companies on cash flow basis. The average payout ratio of both the subsidiaries and parent companies have more stable dividend payment

record on cash flow basis than on net income basis. The distinct feature is the lower coefficient of variation in average payout ratio of parent companies on cash flow basis than that of the subsidiaries. This is the opposite to the net income basis and implies that the subsidiaries are more willing to adjust depreciation allowances as a source of funds. The results of preliminary tests on sample companies are in TABLE 31 and TABLE 32.

TABLE 5

Average Payout Ratio of U.S. owned Canadian Subsidiaries and their Parent Companies

	Number of Samples	Average Payout Ratio	Standard Deviation	C.V. *
U.S. Parent Companies	418	50.94	81.25	1.60
Canadian Subsidiaries -				
All Samples	418	36.57	34.07	.93
Fixed Exchange Rates	173	43.49	34.63	.80
Floating Exchange Rates	233	31.07	32.66	1.05

* C.V. = Coefficient of Variation
= Standard Deviation / Average Payout Ratio.

TABLE 6

Average Payout Ratio of U.S. owned Non-Canadian Subsidiaries and their Parent Companies

	Number of Samples	Average Payout Ratio	Standard Deviation	C.V. *
U.S. Parent Companies	130	46.05	56.86	1.23
Non-Canadian Subsidiaries -				
All Samples	130	59.59	53.85	.90
Fixed Exchange Rates	45	59.23	56.99	.96
Floating Exchange Rates	85	59.78	52.46	.88

* C.V. = Coefficient of Variation
= Standard Deviation / Average Payout Ratio.

TABLE 7

Average Payout Ratio of U.S. owned Canadian Subsidiaries and their Parent Companies (On Cash Flow Basis)

	Number of Samples	Average Payout Ratio	Standard Deviation	C.V. *
U.S. Parent Companies	383	25.81	11.01	.43
Canadian Subsidiaries -				
All Samples	383	20.19	11.39	.56
Fixed Exchange Rates	173	43.49	34.63	.80
Floating Exchange Rates	233	31.07	32.66	1.05

* C.V. = Coefficient of Variation
= Standard Deviation / Average Payout Ratio.

(2) Correlation between parents´ payout and subsidiaries´ payout ratio

Referring to TABLE 8, TABLE 24 and TABLE 30, the low correlation between parents´ payout ratio and subsidiaries´ payout ratio might suggest that the subsidiaries do not follow parents´ payout ratio. Previous surveys by Zenoff (1968) and Robbins and Stobaugh (1973) revealed the importance attached to the parent company´s payout ratio in determining dividends to be received from abroad. But the two surveys were done during the periods of fixed exchange rates when the foreign subsidiaries did not need to be concerned about exchange rates. During the periods of floating exchange rates, the parent companies seem to no longer require the subsidiaries to follow parents´ target payout ratio. This finding suggests that the U.S. owned foreign subsidiaries do not follow the dividend policy of their U.S. parent companies.

As we see in TABLE 24 and TABLE 30, the correlation between parents´ payout and subsidiaries´ payout ratio on cash flow basis is in general much higher than on net income basis (0.28 versus 0.04). This shows that the subsidiaries have similar payout behavior on cash flow

basis. The parent companies may establish target payout ratio not on net income basis but on cash flow basis.

TABLE 8

Distribution of Correlation
Between U.S. Parent's Payout and
Canadian Subsidiary's Payout Ratio

(On Net Income Basis)

Correlation Range	All Companies	Percentage of All Companies
1.00 - .80	1	3%
.80 - .61	4	14
.60 - .41	5	17
.40 - .21	5	17
.20 - 0	14	48
Total	29	100%

TABLE 9

Distribution of Correlation
Between U.S. Parent's Payout and
Canadian Subsidiary's Payout Ratio

(On Cash Flow Basis)

Correlation Range	All Companies	Percentage of All Companies
1.00 - .80	3	11%
.80 - .61	3	11
.60 - .41	2	7
.40 - .21	7	25
.20 - 0	13	46
Total	28	100%

(3) Correlation between earnings and dividends

Referring to TABLE 25 in Appendix, 23 out of 29 U.S. owned Canadian subsidiaries have positive correlation between net income and dividends, two subsidiaries (Union Oil and Warnaco) have negative correlation, and two subsidiaries - Superior Oil and Murphy Oil - have zero correlation (meaning that they did not pay anything at all) during the whole period. Positive correlation between net income and dividends implies that dividends are positively associated with earnings during the periods. Two subsidiaries, Safeway Canada and Crown Cork and Seal, did have equal dividend amounts during the whole period. They did not change dividends at all for the whole 18 years.

Most of the U.S. parent companies have high positive correlations between net income and dividends. Only General Dynamics had negative correlation between earnings and dividends while Crown Cork and Seal and Teledyne did not pay any dividends at all during 1964-1982.

Given the high initial fixed cost and fluctuating oil price, it can be understood that the oil subsidiaries (Superior Oil, Union Oil, and Murphy Oil) have highly

unusual dividend payment behavior than any other subsidiaries.

(4) Summary of Preliminary Tests

The U.S. owned foreign subsidiaries have more stable dividend payment records than their U.S. parent companies. It seems that the subsidiaries are more stuck to the continuity of dividend policy than their U.S. parent companies. The intracompany dividend policy may be more focused on the consistency that is designed to show that these payments are necessary and legitimate business expenses. From the view point of host countries, the host countries are firm to limit the size of the dividend remittances as a percentage of earnings. This difference in consistency of payment records between the subsidiaries and their U.S. parents is further supported by the fact that the U.S. owned foreign subsidiaries do not follow their U.S. parent companies' dividend payout policy. There is a great difference in payment behavior of the U.S. owned foreign subsidiaries during the periods of fixed exchange rates and floating exchange rates. The level of dividends are highly associated with the level of earnings in the U.S. owned foreign subsidiaries.

V-3 Empirical Model Tested

The statistical tests are done only for the Canadian subsidiaries on net income basis. The correlation between net income and cash flow is very high (.95), hence there is no need to do the anlysis on cash flow basis. The data of non-Canadian subsidiaries are very small, sample and time specific, and they contain no useful information hence no statistical tests will be done using them.

(1) Lintner´s Model and Extension

At first, Lintner´s partial adjustment model was applied to all sample observations of 29 Canadian subsidiaries during 1964-1982. Referring to the results in TABLE 10, Lintner´s model explained 72% of variation of the regression (R^2 is .72), and adjustment rate was .50 which means that the Canadian subsidiaries adjusted 50 cent out of 1 dollar net increase of dividends. The constant term was positive and statistically significant. During the same periods, the U.S. parent companies have adjustment rate of .21 and R-square was .33.

The adjustment rate of .72 during the periods of

fixed exchange rates may imply that the subsidiaries are relatively aggressive in adjusting to higher earnings while the small adjustment rate of .35 during the periods of floating exchange rates will show that the subsidiaries are relatively reluctant to change dividends. This phenomenon might imply more frequent use of transfer instruments such as transfer prices, invoicing, and compensating balance during the periods of floating exchange rates. This finding also explains why average payout ratio is higher during the periods of fixed exchange rates than during the periods of floating exchange rates.

In order to test the null hypothesis that the U.S. owned foreign subsidiaries have the same payment behavior during the periods of fixed and floating exchange rates, Chow test was used. Chow test is given in the following form.

$$F = \frac{SSE(R) - SSE(F)}{df_R - df_F} \Big/ \frac{SSE(F)}{df_F}$$

This is distributed at $F(df_R - df_F, df_F; .95)$.

Here SSE(R) is the sum of squared residuals on fitting Lintner's model to the combined sample, SSE(F) is obtained by adding the sum of squared residuals of

Lintner's model on each sample of fixed and floating exchange rates, and df is degree of freedom.

Specifically,

$$F = \frac{\frac{143 - 118}{3}}{\frac{118}{361}} = 25.49$$

where, $SSE(F) = 118 = 70 + 48$
$SSE(R) = 143$
$df_R = 151 + 216 - 3 = 364$
$df_F = (151-3) + (216-3) = 361$

The critical value is found to be 2.37. So we reject the null hypothesis that the U.S. owned Canadian subsidiaries have the same payment behavior during the periods of fixed and floating exchange rates.

Having demonstrated that the regression coefficients for the two regimes were indeed different, we now turn to test whether the variables such as exchange rates and interest rates might be important during the periods of floating exchange rates. Lintner's model is shown above to have significantly different values for parameter estimates in the fixed exchange rate period, compared to the floating exchange rate period. It may be that the difference is due to the one or all of the financial variables such as fluctuating exchange rates, higher interest rates and inflation rates during the periods of floating exchange rates, not considered in the F test for

Lintner equation.

Referring to the F value in TABLE 12 and 15, we reject the null hypothesis that there is no linear relationship between the dependent variable and the entire set of independent variables. As we see in TABLE 11 and 14, the correlation matrix shows the correlation between the dependent variable (D) and each independent variable as well as the correlation between the independent variables. Note small correlation between the independent variables except that between the level of interest rates and inflation rates, hence multicolinearity may not be significant in this multiple regression analysis. But, no new independent variables of levels and changes of exchange rates, interest rates, and inflation rates are highly correlated with the dividend payment.

TABLE 13 and 16 show the statistics for the independent variables. The partial regression coefficient of changes in interest rate variable in TABLE 16 is significantly different from zero at 5% of significance level for a 1-tail test. A 1-tail test instead of 2-tail test is used because the regression coefficient of interest rate variable in alternative form of hypothesis III is hypothesized negative. Hence, the change in interest rates is found to be important in the

TABLE 10

Regression Results of Lintner´s Model

Lintner´s
MODEL : $Dt = a + crEt + (1-c)Dt-1 + Ut$
(EQ. 4) (Ut is an error term)

U.S Parents and Canadian Subsidiaries	Sample Size	a (t-value)*	cr	(1-c)	R2	c	SSE **
U.S. Parent Companies	379	0.04 (1.98)	0.09 (12.54)	0.79 (9.49)	0.32	0.21	150
U.S. owned Canadian Subsidiaries							
All Periods Subsidiaries	367	0.10 (2.18)	0.13 (13.65)	0.50 (16.23)	0.72	0.50	143
Fixed Exchange Rate Periods	151	0.30 (4.03)	0.13 (9.62)	0.28 (5.29)	0.64	0.72	70
Floating Exchange Rate Periods	216	-0.12 (-2.50)	0.16 (13.55)	0.65 (20.86)	0.85	0.35	48

* 5% of significance level
** Sum of Squared Errors

TABLE 11

Correlation Matrix of Equation (8)

(Floating Exchange Rate Period)

	D	E	DLAG	EX	I	CHP
D	1					
E	.74	1				
DLAG	.85	.50	1			
EX	.03	-.03	.04	1		
I	-.05	-.06	-.03	.12	1	
CHP	-.06	-.05	-.06	-.05	.67	1

D : Dividend per share
E : Earnings per share
DLAG : Lagged dividend
EX : Level of exchange rate
I : Level of interest rate
CHP : Changes in price level

TABLE 12

Statistics and Analysis of Variance
of Equation (8)

R-square : .8503
Adjusted R-square: .8467
Standard Error : .4773
F-value (5,210;.95) = 238.56

TABLE 13

Statistics for Variables
in Equation (8)

Variable	Estimated Coefficient	Standard Error	t Statistics
Constant	-.2448	.2709	-.904
E	.1573	.0117	13.458
DLAG	.6478	.0314	20.648
EX	.1030	.1361	.757
I	-.0065	.0131	-.499
CHP	.0079	.0283	.279

TABLE 14

Correlation Matrix of Equation (12)

(Floating Exchange Rate Period)

	D	E	DLAG	CHEX	CHI	CHP	DCHG
D	1						
E	.74	1					
DLAG	.85	.50	1				
CHEX	.02	-.03	.04	1			
CHI	.02	.14	.01	-.35	1		
CHP	-.06	-.05	-.06	-.04	.13	1	
DCHG	.31	.42	-.20	-.00	.03	-.01	1

D : Dividend per share
E : Earnings per share
DLAG : Lagged dividend
CHEX : Changes in exchange rates
CHI : Changes in interest rates
CHP : Changes in price level
DCHG : Changes in dividend

TABLE 15

Statistics and Analysis of Variance
of Equation (12)

R-square : .8521
Adjusted R-square: .8485
Standard Error : .4745
F-value (5,210;.95) = 241.91

TABLE 16

Statistics for Variables
in Equation (12)

Variable	Estimated Coefficient	Standard Error	t Statistics
Constant	-.1272	.2065	-.616
E	.1604	.0117	13.659
DLAG	.6449	.0312	20.664
CHEX	-.0006	.0098	-.057
CHI	-.0268	.0157	-1.703
CHP	.0029	.0209	.140

intracompany dividend payment. More extension of interest rate variable is made in order to further check the effect of interest rates on the dividend payment of Canadian subsidiaries.

In the following section, the result of statistical tests where only exchange rate variable alone was considered in the extended model of Lintner´s equation are explained.

(2) The Effect of Exchange Rates On The Intracompany Dividends

In the models tested, the essential concern is whether the regression coefficient of exchange rate variable is significantly different from zero or not. Fitting the reduced equations of (16), (20) and (24) into the data set of the Canadian subsidiaries during the periods of floating exchange rates (216 observations) resulted in the finding that the regression coefficients B_3 and cB3 of exchange rate variables in the two models were not statistically significant at the significance level of 5%. The regression coefficients are reported in TABLE 17 and 18.

Possible reason of these results may be due to the fact that the accounting numbers (net income and

TABLE 17

Regression Results of Additive Form

(EX : Exchange Rates,

$$\Delta EX = \frac{EXt - EXt\text{-}1}{EXt\text{-}1} \times 100, \text{ and}$$

Ut is an error term)

MODEL : $Dt = a + crEt + (1\text{-}c)Dt\text{-}1 + cB3\ EXt + Ut$
(EQ. 16)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	cB3	R2
Floating Exchange Rate Periods	216	-0.22 (-1.42)	0.16 (13.54)	0.65 (20.75)	0.01 (.56)	0.85

* 5% of significance level

MODEL : $Dt = a + crEt + (1\text{-}c)Dt\text{-}1 + B3\Delta EXt + Ut$
(EQ. 20)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	B3	R2
Floating Exchange Rate Periods	216	-0.13 (-2.50)	0.16 (13.53)	0.65 (20.76)	0.09 (.08)	0.85

* 5% of significance level

TABLE 18

Regression Results of Multiplicative Form

(EX : Exchange Rates,
HXt : Ratio of Exchange Rate from 1972,

$$= \frac{EXt}{EX\ 1972}, \text{ and}$$

Ut is an error term)

MODEL : $\log Dt = c\log a + cr\log Et + (1-c)\log Dt-1 + cB3\log HXt + \log Ut$
(EQ. 24)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	cB3	R2
Floating Exchange Rate Periods	216	-0.33 (-4.83)	.30 (6.94)	0.61 (11.47)	-0.21 (-.54)	0.68

* 5% of significance level

dividends) are annual figures rather than monthly or quarterly hence the accounting information may not have captured the daily movement of exchange rates.

The fact that the regression results did not show the importance of exchange rate variable even under the floating exchange rates might suggest that another mechanism of moving money such as transfer pricing is very likely to incorporate the changes in exchange rates.

(3) The Effect of Interest Rates On The Intracompany Dividends

In order to investigate the effect of interest rates of host countries and U.S. on the intracompany dividend payment, two kinds of model are introduced, additive and multiplicative form. The level of interest rates entered into the desired dividend equation, and the changes of interest rates entered into the adjustment equation. Relative interest rates between Canada and U.S. entered into the desired dividend equation. The Canadian real interest rates in each period and difference in real interest rates between Canada and U.S., respectively were added to both the desired dividend equation and the adjustment equation. The point is to investigate whether the regression coefficients of the various kinds of

interest variables are significantly different from zero or not.

The results of fitting the data set into the reduced form of equations are in TABLE 19 through TABLE 22.

Referring to the results in TABLE 19, one notices significant regression coefficient of changes in interest rate variable from equation (33). The sign of the regression coefficient is negative which was postulated in this study. This statistical result supports the alternative hypothesis III that increase in the interest rate of Canada would decrease the dividend payment while decrease in the interest rates of Canada would raise the dividend payment of the U.S. owned Canadian subsidiaries. The absolute magnitude of B_3 in equation (33) during the floating exchange rate periods implies .03 dollar (3 cents) decrease of actual dividend amount per one percentage point increase of interest rates in Canada. The result suggests that managers of the subsidiaries are more sensitive to the movement of interest rates than exchange rates.

TABLE 20 presents the statistically insignificant value of regression coefficient of interest rate variable which is the ratio of Canadian interest rates to U.S. interest rates from 1972. It means that the relative interest rates between Canada and U.S. are not important

in explaining the dividend payment behavior of the U.S. owned Canadian subsidiaries. Because the correlation between Canadian interest rates and U.S. interest rates was very high (the correlation was .94), this form of interest variable did not capture much of the information from the regression.

TABLE 21 shows insignificant regression coefficient of real interest rate variable in equation (42) and (46). Considering the Canadian interest rates in relation to Canadian inflation rates did not explain much the dividend payment behavior of U.S. owned Canadian subsidiaries.

A final look at TABLE 22 confirms the findings in previous case. When we considered both the interest rates and inflation rates of Canada and U.S., the regression coefficients of the difference in real interest rates between the two countries were not statistically different from zero.

Among the results of various interest rate variable, the additive form with the changes in Canadian interest rates added to the adjustment equation of Lintner´s model was good in explaining the dividend payment behavior of U.S. owned Canadian subsidiaries during the periods of floating exchange rates.

TABLE 19

Regression Results of Additive Form

(I : Short Term Interest Rates of Canada,
ΔIt = It - It-1, and
Ut is an error term)

MODEL : $Dt = a + crEt + (1-c)Dt-1 + cB3\ It + Ut$
(EQ. 29)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	cB3	R2
All Periods	367	0.23 (0.56)	0.13 (13.23)	0.35 (16.19)	-0.02 (-.50)	0.72
Fixed Exchange Rate Periods	151	0.07 (0.13)	0.13 (7.45)	0.22 (5.12)	.00 (.01)	0.64
Floating Exchange Rate Periods	216	-0.09 (-.82)	0.16 (13.49)	0.65 (20.82)	-.00 (-.34)	0.85

* 5% of significance level

MODEL : $Dt = a + crEt + (1-c)Dt-1 + B3\Delta It + Ut$
(EQ. 33)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	B3	R2
All Periods	367	0.10 (2.17)	0.13 (13.63)	0.50 (16.21)	-0.01 (-.59)	0.72
Fixed Exchange Rate Periods	151	0.30 (4.01)	0.13 (9.58)	0.28 (5.27)	.00 (.02)	0.64
Floating Exchange Rate Periods	216	-1.00 (-2.04)	0.16 (13.73)	0.64 (20.78)	-0.03 (-1.80)	0.85

* 5% of significance level

TABLE 20

Summary of Regression Results

(I : Short Term Interest Rates,
J : Ratio of the ratio of Canadian interest rates to that of U.S. interest rates from 1972,

$$= \frac{(It / I1972)\ \text{Canada}}{(It / I1972)\ \text{U.S.}}, \text{ and}$$

Ut is an error term)

MODEL : $\log Dt = c\log a + cr\log Et + (1-c)\log Dt-1 + cB3\log Jt + \log Ut$
(EQ. 38)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	cB3	R2
Floating Exchange Rate Periods	216	-0.42 (-5.65)	0.31 (7.13)	0.61 (11.54)	0.19 (1.21)	0.68

* 5% of significance level

TABLE 21

Regression Results of Additive Form

(I : Short Term Interest Rates of Canada,
P : Annual average Consumer Price Index,
RI : Real Interest Rates

$$= It - \frac{Pt - Pt\text{-}1}{Pt\text{-}1} \times 100, \text{ and}$$

Ut is an error term)

MODEL : $Dt = a + crEt + (1-c)Dt\text{-}1 + cB3RIt + Ut$
(EQ. 42)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	cB3	R2
All Periods	367	0.10 (2.19)	0.13 (13.60)	0.50 (16.21)	-.00 (-.25)	0.72
Fixed Exchange Rate Periods	151	0.29 (3.89)	0.13 (9.58)	0.28 (5.27)	.00 (.06)	0.64
Floating Exchange Rate Periods	216	-0.12 (-2.43)	0.16 (13.48)	0.65 (20.81)	-.00 (-.24)	0.85

* 5% of significance level

MODEL : $Dt = a + crEt + (1-c)Dt\text{-}1 + B3RIt + Ut$
(EQ. 46)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	B3	R2
All Periods	367	0.10 (2.19)	0.13 (13.60)	0.50 (16.21)	-.00 (-.25)	0.72
Fixed Exchange Rate Periods	151	0.29 (3.89)	0.13 (9.58)	0.28 (5.27)	.00 (.06)	0.64
Floating Exchange Rate Periods	216	-0.12 (-2.43)	0.16 (13.48)	0.65 (20.81)	-.00 (-.24)	0.85

* 5% of significance level

TABLE 22

Regression Results of Additive Form

(I : Short Term Interest Rates of Canada and U.S.,
P : Annual average Consumer Price Index,
RI : Real Interest Rates

$$= It - \frac{Pt - Pt\text{-}1}{Pt\text{-}1} \times 100,$$

DI = RI Canada - RI U.S., and
Ut is an error term)

MODEL : $Dt = a + crEt + (1\text{-}c)Dt\text{-}1 + cB3DIt + Ut$ (EQ. 50)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	cB3	R2
All Periods	367	0.10 (2.12)	0.13 (13.62)	0.50 (16.21)	-.00 (-.04)	0.72
Fixed Exchange Rate Periods	151	0.29 (4.20)	0.13 (9.53)	0.28 (5.26)	.00 (-1.25)	0.64
Floating Exchange Rate Periods	216	-0.12 (-2.31)	0.16 (13.49)	0.65 (20.82)	-0.01 (-.48)	0.85

* 5% of significance level

MODEL : $Dt = a + crEt + (1\text{-}c)Dt\text{-}1 + B3DIt + Ut$ (EQ. 54)

U.S. owned Canadian Subsidiaries	Sample Size	a (t-value)*	cr	1-c	B3	R2
All Periods	367	0.10 (2.12)	0.13 (13.62)	0.50 (16.21)	-.00 (-.04)	0.72
Fixed Exchange Rate Periods	151	0.31 (4.20)	0.13 (9.53)	0.28 (5.26)	-.06 (-1.25)	0.64
Floating Exchange Rate Periods	216	-0.12 (-2.31)	0.16 (13.49)	0.65 (20.82)	-.00 (-.48)	0.85

* 5% of significance level

C H A P T E R VI

SUMMARY AND CONCLUSIONS

VI-1 Summary and Conclusions

This study investigates the dividend payment behavior of the U.S. owned foreign subsidiaries on cross-sectional and time-series basis from 1964 to 1982. The implication of this study is that by understanding the dividend policy or model of behavior of the U.S. owned foreign subsidiaries in the changing environments of the host countries, financial manager of the U.S. parent company can better forecast the future dividend payment and financing needs. Also investors in U.S. can forecast the influence of the exchange rates, interest rates, and inflation rates of the host countries and U.S. on earnings and dividends of the parent companies. Because the dividend decision is the other side of a coin of financing decision, management can have a better idea on how much money they need for the investment project both in the U.S. parent companies and foreign subsidiaries.

The factors which are assumed to influence the

dividend decision of the foreign subsidiaries are host and home country's corporation income tax rates, withholding tax rates, exchange rates, interest rates and inflation rates of the host countries and U.S., currency control, parent company's target dividend payout ratio, and the degree of ownership. The U.S. foreign exchange rate system has been changed from the fixed exchange rates to the floating exchange rates as of 1973. This change introduced the wholly new dimension into the financial management of multinational corporations. Transfer of financial flows between U.S. and host countries got enormous attention since then.

The Canadian subsidiaries had all the information needed for the study while the subsidiaries other than Canada had not all the information. The data set of other than the Canadian subsidiaries are grouped into non-Canadian subsidiaries because the number of the subsidiaries per host country is small and the periods per subsidiary are short. Therefore the main hypotheses are tested with the Canadian subsidiaries.

The main model used here is Lintner's partial adjustment model. In the time-series study, every observation of each subsidiary in each period is dealt with independently, hence all the observations are pooled.

In the empirical study, the preliminary facts such as average payout ratio, standard deviation, and coefficient of variation in average payout ratio are at first investigated.

Next, correlations between the U.S. parent companies´ payout ratios and their foreign subsidiaries´ payout ratios are calculated in order to investigate what kind of relationship there is in the payment behavior between the U.S. parent companies and their foreign subsidiaries.

The correlations between earning and dividends are also calculated for each subsidiary in order to see whether dividends are always related to earnings.

For the U.S. owned Canadian subsidiaries, all these preliminary tests are also done on cash flow basis. Depreciation allowances are supposed to influence the dividend payment decision of the foreign subsidiaries hence cash flow which is net income plus depreciation allowances is used in order to see whether it would be a better variable than the net income in explaining the dividend payment behavior of the foreign subsidiaries.

All these preliminary tests are also done with the non-Canadian subsidiaries except on cash flow basis because the information on depreciation allowances is not available.

The interesting findings from the preliminary tests are as follows: First, the U.S. owned foreign subsidiaries have more stable dividend payment records than their U.S. parent companies. Second, the U.S. owned foreign subsidiaries do not follow their U.S. parent companies´ dividend payout policy. The correlations between the payout ratios of the U.S. parent companies and their foreign subsidiaries are very low. Third, there is a great difference in payment behavior of the U.S. owned foreign subsidiaries during the periods of fixed exchange rates and during the periods of floating exchange rates. Finally, the level of dividends is highly associated with the level of earnings in U.S. owned foreign subsidiaries.

Next, Lintner´s partial adjustment model was applied to all samples of the U.S. owned Canadian subsidiaries and their U.S. parent companies, respectively. Adjustment rates and R-squares of Lintner´s model were given special attention and compared to each other in the contrasting data groups such as subsidiaries versus parent companies, and the periods of fixed exchange rates versus floating exchange rates. In order to find out the difference in the payment behavior during the periods of fixed and floating exchange rates, Chow test was used to further investigate whether there is a real difference in

the dividend payment behavior. The statistical result showed different payment behavior between the periods of fixed and floating exchange rates.

F test was used in order to check whether there was a linear association between the dividend payment and other independent variables such as exchange rates, interest rates, and inflation rates. The F test showed the linear relationship between the dividend payment and other independent variables. But the correlation between the dividned payment and any of the new independent variables was very low. But the regression coefficient of changes in interest rates was significantly different from zero.

Even though the correlation between the dividend payment and the levels or changes in the exchange rates was low, exchange rates alone entered into Lintner´s model in order to test the null hypothesis that the exchange rate does not affect the dividend payment decision of the U.S. owned foreign subsidiaries. In order to investigate the influence of exchange rates on the dividend payment behavior of the U.S. owned foreign subsidiaries, the levels of exchange rates were added to the desired dividend payment equation and the changes in exchange rates were added to the adjustment equation in Lintner´s model. And the ratios of exchange rates from

1972 entered into Lintner´s model in the multiplicative form. In the data set of the Canadian subsidiaries during the periods of floating exchange rates, the regression coefficients of the exchange rates both in the additive and multiplicative models were not statistically significant. Even though the regression results showed that the subsidiaries did not seem to adjust their dividend payments to the exchange rates, the results will not be strong enough to be generalized because of the annual accounting numbers instead of monthly or quarterly accounting figures of the sample firms. An implication of these results is that changes in dividends may not be affected by changes in exchange rates since transfer pricing is very likely to incorporate these changes in order to maintain a fairly constant real value of repatriated dividends.

In order to find out the influence of the interest rates of the host countries on the dividend payment decision of the U.S. owned foreign subsidiaries, various kinds of interest rate variables entered into the partial adjustment model either in the additive or multiplicative form. The regression results showed that only the regression coefficient of changes in interest rates was statistically significant in the data set of the U.S. owned Canadian subsidiaries during the periods of

floating exchanage rates. The regression coefficients of other interest rate variables either in the additive or multiplicative form were not statistically different from zero.

Based upon the empirical study, the following conclusions can be made:

First, Lintner´ model was better fit for the U.S. owned Canadian subsidiaries than for the U.S. parent companies in terms of R-square. The dividend adjustment rate of Lintner´s model was .50 for the Canadian subsidiaries which was greater than .21 of the U.S. parent companies. Higher adjustment rates of the U.S. owned foreign subsidiaries in Lintner´s model seem to be related to the more stable dividend payment records in terms of smaller coefficient of variation for average payout ratio than the U.S. parent companies. That also means that the U.S. parent companies are very conservative in adjusting their dividends while the U.S owned foreign subsidiaries are aggressive in adjusting their dividends. Even though Lintner´s model is still valid in the international setting, the explanatory power of Lintner´s model is different under different regimes. Chow test showed very different parameter value of Lintner´s equation during the periods of fixed exchange rates, compared to the periods of floating exchange

rates. Also, the magnitude of adjustment rate of dividends under fixed exchange rates was .72 which was much greater than .35 under floating exchange rates. This suggests that Canadian subsidiaries are more conservative in adjusting their dividends during the periods of floating exchange rates than during the periods of fixed exchange rates. Traditionally in Lintner´s model the constant term has been postulated positive because managers are reluctant to cut dividends. But under floating exchange rates the constant term of Lintner´s model has negative sign, implying that firms were ready to cut dividends.

Second, the U.S. owned foreign subsidiaries do not seem to adjust their dividend payment to the changes in exchange rates. Hypothesis II asked whether there is additional variable to increase the explanatory power of Lintner´s model under floating exchange rates. The statistical results did not support the alternative hypothesis that exchange rate is an important variable.

Third, hypothesis III investigated whether there is another variable in Lintner´s model given the different interest rates and inflation rates of the host country and U.S.. Only the regression coefficient of changes in the Canadian interest rates added to the adjustment equation in Lintner´s model during the periods of

floating exchange rates showed significant difference from zero. Hence we can say that Lintner´s model is misspecified during the periods of floating exchange rates and the changes in nominal interest rates of the host countries should be added to Lintner´s partial adjustment model to better explain the dividend payment behavior of the U.S. owned foreign subsidiaries.

VI-2 Implications for Future Research

First, in this study annual accounting information was used. But in order to better investigate the influence of exchange rate on dividend policy of the U.S. owned foreign subsidiaries, quarterly accounting information would provide better results. The foreign subsidiaries alter their dividend payment on short term basis rather than on long term basis.

Second, if more extensive data on U.S. owned foreign subsidiaries of U.S. parent companies can be obtained, a comparative study of the dividend policy may show how subsidiaries in one host country may pay dividends differently, compared to the subsidiaries in other countries.

Third, different kind of accounting information, for example, the level of inventory, may be a better

indicator of how the dividend payment will be in the next period. The changes in the inventory would be more closely related to the changes in dividends than changes in earnings. The cash account would also be another candidate for this kind of approach to the dividend payment behavior of the U.S. owned foreign subsidiaries.

Fourth, more sophisticated models which combine the differential interest, inflation, and tax rates between U.S. and host countries could be developed. Because of multicollinearity in regression analysis among the exchange rates, interest rates, and inflation rates, this approach should solve at first the interrelationship among those independent variables.

ENDNOTES

1. The adjectives "multinational", "international", "global", "world wide", "supernational", and "transnational" are used interchangeable in this area. For the good reviews on multinational corporations, see Hymer (1960), Kindleberger (1969), Aharoni (1971), and Caves (1971).

2. According to Kopits (1976), the four distinguished characteristics of MNC are : international operations, collective transfer of resources, ownership with control, and cosmopolitan mentality.

3. Examples of Financial Flows :
   Dividends
   Fees, royalties, corporate overhead costs.
   Interest and repayment of credit/loans.
   Equity Investment
   Loans
   Credit on goods and services

4. Transfer price is the price at which one unit of a firm sells goods and/or services to an affiliated unit. The opposite concept to transfer price is arm´s length price which is negotiated between unrelated parties.

5. The reinvocing center, which is usually located in low-tax nations or a tax haven, takes title to all goods sold by one corporate unit to another affiliate or to a third party customer, although the goods move directly from the factory or warehouse location to the purchaser. The center pays the seller and, in turn, is paid by the purchasing unit. Tax authorities may be suspicious of the transactions with an affiliated trading company located in a tax haven.

6. Leading and Lagging: Accelerating (leading) and delaying (lagging) the international payments by modifying credit terms, normally on trade between affiliates. Leading and lagging is a highly favored means of shifting liquidity between affiliates.

7. Intracorporate loans are legitimate transfer mechanisms of financing foreign operations and moving the funds internationally. The most important methods are direct loans, back-to-back financing, parallel loans, and currency swaps. Direct loans are straight extensions of credit from the parent to an affiliate or from one affiliate to another. Back-to-back financing is an intracorporate loan channeled through a bank. Parallel loans are the simultaneous borrowing and lending operations usually involving the four related parties in two different countries. Currency swap is a simultaneous borrowing and lending operation whereby two parties sell currencies to each other at the spot rate and undertake to reverse the exchange after a fixed term at a fixed exchange rate.

8. Compensating balance : When a U.S. bank lends funds to a firm, it charges interest on the full amount of the loan and furthermore requires that a spicified amount of compensating balances be kept on deposit in the bank. This is in contrast to foreign banks, which generally lend on an overdraft basis with the firm paying full interest only on that portion drawn down plus a committment fee of perhaps .5 percent annually on the unusued balance. The U.S. dollar accounts held in the bank´s branches for transaction purposes by the company´s affiliates around the world can be used to satisfy this compensating balance requirement. For example, if subsidiary A increases its bank deposit, then additional funds can be released to the parent or other subsidiaries as their compensating balance requirements are correspondingly reduced.

9. Debt versus equity investment : Multinationals generally prefer loans to equity for several reasons. First, parent company loans to foreign subsidiaries are often regarded as equivalent to equity investments both by host countries and local creditors. Second, dividends or reductions in equity are more closely controlled by government than interest and loan repayment. Third, interest paid on a loan is ordinarily tax deductible in the host country whereas dividend payments are not. However, firms do not have complete latitude in choosing their debt to equity ratios abroad. Some host governments might restrict a subsidiary´s local borrowing to a certain percentage

of the parent´s equity.

10. Firms often have the option of selecting the currencies in which to invoice the interaffiliate transactions. The choice of invoicing currency has both tax and currency control implications.

    Tax effects : The particular currency in which the interaffiliate transactions are invoiced can affect after-tax profits if currency fluctuation is anticipated.

    Exchange controls : The choice of invoicing currency can also enable a firm to remove some blocked funds from a country that has currency controls.

11. Some classes of investors might prefer dividends to capital gains. For example, some invididual investors may find it cheaper and easier to receive dividends than to sell or borrow again their shares. In endowment funds, only the dividend income may be spent. In certain trust funds, one beneficiary receives the dividend income instead of capital gains. Corporations usually pay higher taxes on realized capital gains than on dividend income because of the 85% exclusion of dividends.

12. In the 1950s, John Lintner conducted a series of interviews with the corporate managers about their dividend policies. Lintner´s study determined that the selective firms appeared to have target payout ratios viewed in a long-term context. See, Lintner (1956).

13. For this kind of empirical study on informational content of dividends, see Fama, Fisher, Jensen, and Roll (1969), and Copeland (1979).

14. API(Abnormal Performance Index) measures abnormal performance of a certain model or market efficiency by deviations from the market model.

15. Agency costs are the costs associated with monitoring management´s actions to insure that these actions are

consistent with contractual agreements among management, stockholders, and debtholders. For the detail of agency costs, see Jensen and Meckling (1976).

16. Elton and Gruber (1970).

17. Lewellen, Stanley, Lease, and Schlarbaum (1978).

18. For an empirical study, see Mutti (1981).

19. The marginal entrenchment hypothesis has been advocated by DeAngelo and Rice (1983).

20. See Vermaelen (1981).

21. Refer to footnote No. 12.

22. Fama and Babiak (1968) also found that in applying the dividend models to the data of most firms, net income seemed to provide a better measure of profits than either cash flow or net income and depreciation included as separate variables in the model.

23. Robbins and Stobaugh (1973).

24. U.S. Department of Commerce (1979 and 1981).

25. The formula for determining the amount of deemed paid tax is;

$$\frac{\text{Gross Dividend}}{\text{Net Income}} \times \text{Foreign Tax}$$

In this example,

$$\frac{18.72}{52.00} \times 48 = \$\ 17.72$$

Relevant material: Price Waterhouse (1976).

26. For this part, see Kopits (1976).

27. Under the Subpart F Income provisions of the U.S. International Revenue Code, introduced by the Revenue Act of 1962 and substantially reinforced by the Tax Reduction Act of 1975.

28. The translation methods are ;
    1) the current / non current method prescribes the translation of long-term assets and equities at historical rates whereas short-term assets and liabilities are translated at the exchange rate in effect on the data of balance sheet.

    2) The monetary / non monetary method differentiates between monetary assets and liabilities, those items that represent a claim to receive, or an obligation to pay, a fixed amount of foreign currency units, and non monetary, or physical, assets and liabilities. Monetary items (e.g., cash, accounts payable and receivable, and long-term debt) are translated at the current rate ; non monetary items (e.g., inventory and fixed assets) are translated at historical rates.

    3) Temporal method appears to be a modified version of the monetary / non monetary method, the only difference being that, under the monetary / non monetary method, inventory is always translated at the historical rates.

    4) Current method: Balance sheet items are translated at the current rates, and income statement items are at the annual average spot rates except common stocks.

29. For example, see Biel (1976), Evans (1976), and Shank (1976)

30. For empirical tests of The Internaional Fisher Effect, see Giddy and Dufey (1975), and Aliber and Stickney (1975).

31. Refer to footnote No. 12.

32. For a good survey of the literature in this area, see Johnston (1984).

33. Specifically, the dividends received by parent company from foreign subsidiary consist of gross dividends (net dividends received plus withholding tax) and deemed paid tax which is the portion of foreign tax amount paid in proportion to the gross dividends out of net income; in other words, foreign tax amounts x (gross dividends / net income).

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APPENDIX

Samples and Data

TABLE 23

U.S. Subsidiaries
in Canada

U.S. Parent Company	Canadian Subsidiary	Average Equity Control *	Standard Deviation	Period
Celanese	Celanese	57.00%	0.00%	1964-82
Conoco	Hud.Bay Oil&Gas	57.59	6.40	1964-80
Cr.Cork & Seal	Cr.Cork & Seal	70.00	0.00	1964-75
Dana	Hayes Dana	61.63	3.73	1964-82
Exxon	Imperial Oil	70.00	0.00	1964-82
Gene´l Dynami.	Asbestos	55.00	0.00	1969-82
Gulf	Gulf	66.63	3.04	1964-82
Scott	Scott	54.58	0.84	1964-82
Sears	Simpson Sears	50.00	0.00	1964-82
Sher. Williams	Sherwin Will.	66.65	3.32	1964-80
Superior Oil	Superior Oil	53.00	0.00	1964-78
Warnaco	Warnaco	70.00	0.00	1975-82
Champion Int´l	Weldwood	74.00	0.00	1970-82
Cr.Zellerbach	Cr.Zellerbach	97.65	3.30	1964-80
Ford	Ford	85.32	3.64	1964-82
Fruehauf	Kelsey Hayes	73.00	0.00	1964-82
Fruehauf	Fruehauf	91.00	0.00	1964-82
GE	GE	92.00	0.00	1964-82
GF	GF	100.00	0.00	1974-80
Goodyear	Goodyear	83.95	3.75	1964-82
Kraft	Dominion Dairies	83.53	1.01	1964-80
Murphy Oil	Murphy Oil	77.00	0.00	1970-82
Occi. Pet.	Occidental Pet.	75.82	11.48	1966-82
Safeway	Safeway	100.00	0.00	1964-82
Teledyne	Teledyne	77.00	0.00	1974-82
Texaco	Texaco	73.79	9.95	1964-82
Union Carb.	Union Carb.	75.00	0.00	1964-82
Union Oil	Union Oil	87.00	0.00	1975-82
Westinghouse	Westinghouse	80.42	10.00	1964-82

* Average control during the period

TABLE 24

Correlation Between U.S. Parent's Payout Ratio and Canadian Subsidiary's Payout

U.S. Parent Company	Canadian Subsidiary	Average Equity Control *	Correlation	Period
Celanese	Celanese	57.00%	0.41	1964-82
Conoco	Hud.Bay Oil&Gas	57.59	0.73	1964-80
Cr.Cork & Seal	Cr.Cork & Seal	70.00	0.00	1964-75
Dana	Hayes Dana	61.63	0.78	1964-82
Exxon	Imperial Oil	70.00	0.85	1964-82
Gene'l Dynam.	Asbestos	55.00	0.09	1969-82
Gulf	Gulf	66.63	0.20	1964-82
Scott	Scott	54.58	0.62	1964-82
Sears	Simpson Sears	50.00	0.14	1964-82
Sher. Williams	Sherwin Willi.	66.65	0.44	1964-80
Superior Oil	Superior Oil	53.00	0.00	1964-78
Warnaco	Warnaco	70.00	-0.51	1975-82
Champion Int'l	Weldwood	74.00	0.00	1970-82
Cr.Zellerbach	Cr.Zellerbach	97.65	0.49	1964-80
Ford	Ford	85.32	-0.05	1964-82
Fruehauf	Kelsey Hayes	73.00	-0.15	1964-82
Fruehauf	Fruehauf	91.00	0.16	1964-82
GE	GE	92.00	0.40	1964-82
GF	GF	100.00	-0.27	1974-80
Goodyear	Goodyear	83.95	-0.15	1964-82
Kraft	Dominion Dairies	83.53	-0.68	1964-80
Murphy Oil	Murphy Oil	77.00	0.00	1970-82
Occi. Pet.	Occidental Pet.	75.82	0.32	1966-82
Safeway	Safeway	100.00	-0.04	1964-82
Teledyne	Teledyne	77.00	0.00	1974-82
Texaco	Texaco	73.79	0.52	1964-82
Union Carb.	Union Carb.	75.00	0.36	1964-82
Union Oil	Union Oil	87.00	0.06	1975-82
Westinghouse	Westinghouse	80.42	-0.23	1964-82
Total 29 Companies (n=418)			0.04	

* Average control during the period

TABLE 25

Comparison of Correlation
Between EPS and DPS
of Canadian Subsidiaries

	Equity Control *	Period	Correlation between EPS and DPS: Canadian Subsidiary	Correlation between EPS and DPS: U.S. Parent
Celanese	57.00%	1964-82	0.49	0.13
Conoco	57.59	1964-80	0.99	0.39
Cr.Cork & Seal	70.00	1964-75	N.A.	0.00
Dana	61.63	1964-82	0.41	0.46
Exxon	70.00	1964-82	0.67	0.90
Gene´l Dynamics	55.00	1969-82	0.63	-0.08
Gulf	66.63	1964-82	0.71	0.72
Scott	54.58	1964-82	0.78	0.17
Sears	50.00	1964-82	0.84	0.73
SherwinWilliams	66.65	1964-80	0.62	0.34
Superior Oil	53.00	1964-78	0.00	0.74
Warnaco	70.00	1975-82	-0.21	0.14
Champion Int´l	74.00	1970-82	0.51	0.43
Cr.Zellerbach	97.65	1964-80	0.27	0.51
Ford	85.32	1964-82	0.74	0.63
Kelsey Hayes	73.00	1964-82	0.80	0.40
Fruehauf	91.00	1964-82	0.56	0.40
GE	92.00	1964-82	0.92	0.74
GF	100.00	1974-80	0.94	0.93
Goodyear	83.95	1964-82	0.55	0.54
Kraft	83.53	1964-80	0.54	0.89
Murphy Oil	77.00	1970-82	0.00	0.55
Occidental Pet.	75.82	1966-82	0.84	0.41
Safeway	100.00	1964-82	N.A.	0.89
Teledyne	77.00	1974-82	0.44	0.00
Texaco	73.79	1964-82	0.63	0.69
Union Carb.	75.00	1964-82	0.84	0.61
Union Oil	87.00	1975-80	-0.90	0.97
Westinghouse	80.42	1964-82	0.87	0.71

* Average control during the period
N.A.=Constant DPS during the whole period

TABLE 26

Comparison of Average Payout Ratio
(Dividend/Net Income)

			Canadian Subsidiaries		U.S. Parent	
	Equity Control *	Period	Average Payout Ratio	Standard deviation	Average Payout Ratio	Standard deviation
Celanese	57.00%	1964-82	21.24%	28.81%	22.54%	64.29%
Conoco	57.59	1964-80	37.02	6.34	40.23	12.67
Cr.Cork & Seal	70.00	1964-75	18.97	7.43	0.00	0.00
Dana	61.63	1964-82	54.85	31.86	43.93	14.77
Exxon	70.00	1964-82	53.78	16.21	54.98	10.65
Gene´l Dynamics	55.00	1969-82	34.74	39.33	43.00	70.84
Gulf	66.63	1964-82	41.67	15.51	50.28	27.23
Scott	54.58	1964-82	38.03	10.64	49.49	21.99
Sears	50.00	1964-82	46.88	9.02	49.69	8.89
SherwinWillams	66.65	1964-80	23.90	22.41	36.06	42.37
Superior Oil	53.00	1964-78	0.00	0.00	20.06	63.14
Warnaco	70.00	1975-82	34.32	7.71	110.68	287.92
Champion Int´l	74.00	1970-82	27.75	38.16	46.24	22.61
Cr.Zellerbach	97.65	1964-80	67.17	57.64	56.72	16.75
Ford	85.32	1964-82	60.45	76.18	48.26	68.78
Kelsey Hayes	73.00	1964-82	27.37	24.14	53.86	34.46
Fruehauf	91.00	1964-82	29.62	13.70	53.86	34.46
GE	92.00	1964-82	41.25	9.02	55.05	14.35
GF	100.00	1974-80	38.36	6.47	48.87	11.80
Goodyear	83.95	1964-82	29.12	75.65	42.49	9.06
Kraft	83.53	1964-80	50.01	19.78	50.35	7.66
Murphy Oil	77.00	1970-82	0.00	0.00	18.43	6.60
Occidental Pet.	75.82	1966-82	17.62	12.78	100.01	311.96
Safeway	100.00	1964-82	0.57	0.35	48.00	7.26
Teledyne	77.00	1974-82	90.76	68.07	0.00	0.00
Texaco	73.79	1964-82	32.76	9.91	49.74	12.07
Union Carb.	75.00	1964-82	37.84	23.84	52.52	17.54
Union Oil	87.00	1975-80	33.80	17.56	25.28	3.03
Westinghouse	80.42	1964-82	30.17	15.68	56.48	60.38
Total 29Companies(n=418)			36.57	34.07	50.94	81.25

* Average control during the period

TABLE 27

Comparison of Coefficient
of Variation in Payout Ratio (*)

	Equity Control **	Period	Coefficient of Variation in Payout Ratio: Canadian Subsidiary	Coefficient of Variation in Payout Ratio: U.S. Parent
Celanese	57.00%	1964-82	1.36	2.85
Conoco	57.59	1964-80	0.17	0.31
Cr.Cork & Seal	70.00	1964-75	0.39	0.00
Dana	61.63	1964-82	0.58	0.34
Exxon	70.00	1964-82	0.30	0.19
Gene´l Dynamics	55.00	1969-82	1.13	2.58
Gulf	66.63	1964-82	0.37	0.54
Scott	54.58	1964-82	0.28	0.44
Sears	50.00	1964-82	0.19	0.18
Sherwin Willi.	66.65	1964-80	0.94	1.17
Superior Oil	53.00	1964-78	0.00	3.15
Warnaco	70.00	1975-82	0.22	2.60
Champion Int´l	74.00	1970-82	1.38	0.49
Cr.Zellerbach	97.65	1964-80	0.86	0.30
Ford	85.32	1964-82	1.26	1.43
Kelsey Hayes	73.00	1964-82	0.88	0.64
Fruehauf	91.00	1964-82	0.46	0.64
GE	92.00	1964-82	0.22	0.26
GF	100.00	1974-80	0.17	0.24
Goodyear	83.95	1964-82	2.60	0.21
Kraft	83.53	1964-80	0.40	0.15
Murphy Oil	77.00	1970-82	0.00	0.36
Occidental Pet.	75.82	1966-82	0.73	3.12
Safeway	100.00	1964-82	0.61	0.15
Teledyne	77.00	1974-82	0.75	0.00
Texaco	73.97	1964-82	0.30	0.24
Union Carb.	75.00	1964-82	0.63	0.33
Union Oil	87.00	1975-80	0.52	0.12
Westinghouse	80.42	1964-82	0.52	1.07
Total 29Companies(n=418)			0.93	1.60

* Coefficient of Variation=Standard deviation/Average Payout
** Average control during the period

TABLE 28

Canadian Subsidiary's Payout Ratio
Under Fixed Exchange and Floating
Exchange Rates

Canadian Subsidiary	Equity Control *	Period	Under Fixed Exchange Rates (1964-1972) Average Payout Ratio	Standard deviation	Under Floating Exchange Rates (1973-1982) Average Payout Ratio	Standard deviation
Celanese	57.00%	1964-82	32.00%	26.72%	11.56%	28.38%
Hud.Bay Oil&Gas	57.59	1964-80	41.61	4.94	31.86	2.53
Cr.Cork & Seal	70.00	1964-75	21.77	6.26	10.55	2.35
Hayes Dana	61.63	1964-82	59.07	20.54	51.05	40.27
Imperial Oil	70.00	1964-82	65.45	7.07	43.27	14.91
Asbestos	55.00	1969-82	57.31	23.63	25.72	41.61
Gulf	66.63	1964-82	55.57	7.46	29.15	8.00
Scott	54.58	1964-82	47.55	6.47	29.47	4.17
Simpson Sears	50.00	1964-82	46.51	6.60	47.20	11.13
Sherwin Willi.	66.65	1964-80	29.28	19.02	17.86	25.61
Superior Oil	53.00	1964-78	0.00	0.00	0.00	0.00
Warnaco	70.00	1975-82	N.A.	N.A.	34.32	7.71
Weldwood	74.00	1970-82	27.61	68.30	27.79	30.08
Cr.Zellerbach	97.65	1964-80	93.04	69.12	38.05	17.44
Ford	85.32	1964-82	41.18	29.34	77.79	100.68
Kelsey Hayes	73.00	1964-82	32.92	33.79	22.37	9.56
Fruehauf	91.00	1964-82	34.41	16.69	25.40	9.28
GE	92.00	1964-82	46.78	9.68	36.28	4.66
GF	100.00	1974-80	N.A.	N.A.	38.36	6.47
Goodyear	83.95	1964-82	56.60	94.15	4.39	46.18
Dominion Dairies	83.53	1964-80	35.07	9.89	66.82	13.13
Murphy Oil	77.00	1970-82	0.00	0.00	0.00	0.00
Occidental Pet.	75.82	1966-82	17.32	16.67	17.83	10.24
Safeway	100.00	1964-82	0.89	.2	0.28	0.12
Teledyne	77.00	1974-82	N.A.	N.A.	90.76	68.07
Texaco	73.79	1964-82	35.35	7.18	30.42	11.74
Union Carb.	75.00	1964-82	55.34	6.28	28.80	11.87
Union Oil	87.00	1975-80	N.A.	N.A.	33.80	17.56
Westinghouse	80.42	1964-82	37.31	17.88	23.74	10.50
Total 29Companies		(n=170)	43.49	34.63		
		(n=233)			31.07	32.66

* Average control during the period
N.A.=Not Available

TABLE 29

Coefficient of Variation(*) of Canadian Subsidiary's Payout Ratio Under Fixed Exchange and Floating Exchange Rates

Canadian Subsidiary	Equity Control **	Period	Under Fixed Exchange Rates (1964-1972) Coefficient of Variation	Under Floating Exchange Rates (1973-1982) Coefficient of Variation
Celanese	57.00%	1964-82	0.84	2.46
Hud.Bay Oil&Gas	57.59	1964-80	0.12	0.08
Cr.Cork & Seal	70.00	1964-75	0.29	0.22
Hayes Dana	61.63	1964-82	0.35	0.79
Imperial Oil	70.00	1964-82	0.11	0.34
Asbestos	55.00	1969-82	0.41	1.62
Gulf	66.63	1964-82	0.13	0.27
Scott	54.58	1964-82	0.14	0.14
Simpson Sears	50.00	1964-82	0.14	0.24
SherwinWilliams	66.65	1964-80	0.65	1.43
Superior Oil	53.00	1964-78	N.A.	N.A.
Warnaco	70.00	1975-82	N.A.	0.22
Weldwood	74.00	1970-82	2.47	1.08
Cr.Zellerbach	97.65	1964-80	0.74	0.46
Ford	85.32	1964-82	0.71	1.29
Kelsey Hayes	73.00	1964-82	1.03	0.43
Fruehauf	91.00	1964-82	0.49	0.37
GE	92.00	1964-82	0.21	0.13
GF	100.00	1974-80	N.A.	0.17
Goodyear	83.95	1964-82	1.66	10.52
Dominion Dairies	83.53	1964-80	0.28	0.20
Murphy Oil	77.00	1970-82	N.A.	N.A.
Occidental Pet.	75.82	1966-82	0.96	0.57
Safeway	100.00	1964-82	0.22	0.43
Teledyne	77.00	1974-82	N.A.	0.75
Texaco	73.79	1964-82	0.20	0.39
Union Carb.	75.00	1964-82	0.11	0.41
Union Oil	87.00	1975-80	N.A.	0.52
Westinghouse	80.42	1964-82	0.48	0.44
Total 29Companies	(n=173)		0.80	
	(n=233)			1.05

* Coefficient of Variation=Standard Deviation/Average Payout Ratio
** Average control during the period
N.A.=Not Available

TABLE 30

Correlation Between U.S. Parent's Payout Ratio and Canadian Subsidiary's Payout (Payout Ratio including Depreciation)

U.S. Parent Company	Canadian Subsidiary	Average Equity Control *	Correlation	Period
Celanese	Celanese	57.00%	-0.01	1964-82
Conoco	Hud.Bay Oil&Gas	57.59	0.49	1964-80
Cr.Cork & Seal	Cr.Cork & Seal	70.00	0.00	1964-75
Dana	Hayes Dana	61.63	0.72	1964-82
Exxon	Imperial Oil	70.00	0.81	1964-82
Gene'l Dynami.	Asbestos	55.00	0.14	1969-82
Gulf	Gulf	66.63	0.50	1964-82
Scott	Scott	54.58	0.85	1964-82
Sears	Simpson Sears	50.00	0.24	1964-82
Sherwin Willi.	Sher. Williams	66.65	0.13	1964-80
Superior Oil	Superior Oil	53.00	0.00	1964-78
Warnaco	Warnaco	70.00	NA	1975-82
Champion Int'l	Weldwood	74.00	0.00	1970-82
Cr.Zellerbach	Cr.Zellerbach	97.65	0.30	1964-80
Ford	Ford	85.32	-0.29	1964-82
Fruehauf	Kelsey Hayes	73.00	-0.08	1970-82
Fruehauf	Fruehauf	91.00	-0.03	1964-82
GE	GE	92.00	0.12	1964-82
GF	GF	100.00	-0.32	1974-80
Goodyear	Goodyear	83.95	0.18	1964-78
Kraft	Dominion Dairies	83.53	-0.69	1964-69
Murphy Oil	Murphy Oil	77.00	0.00	1970-82
Occi. Pet.	Occidental Pet.	75.82	0.00	1966-82
Safeway	Safeway	100.00	0.68	1970-82
Teledyne	Teledyne	77.00	0.00	1974-82
Texaco	Texaco	73.79	0.21	1964-82
Union Carb.	Union Carb.	75.00	0.94	1964-82
Union Oil	Union Oil	87.00	0.37	1975-82
Westinghouse	Westinghouse	80.42	-0.36	1964-82
Total 29Companies(n=383)			0.28	

* Average control during the period
NA=Not Available

TABLE 31

Comparison of Payout Ratio including Depreciation (Dividend/(Net Income+Depreciation))

			Canadian Subsidiaries		U.S. Parent	
	Equity Control *	Period	Average Payout Ratio	Standard deviation	Average Payout Ratio	Standard deviation
Celanese	57.00%	1964-82	12.89%	11.75%	17.27%	5.90%
Conoco	57.59	1964-75	25.22	2.19	21.53	5.14
Cr.Cork & Seal	70.00	1964-75	12.49	5.78	0.00	0.00
Dana	61.63	1964-82	26.91	8.26	29.22	7.37
Exxon	70.00	1964-82	35.93	7.68	33.83	4.82
Gene´l Dynamics	55.00	1969-82	14.95	12.56	6.02	7.71
Gulf	66.63	1964-82	22.59	4.78	24.90	5.35
Scott	54.58	1964-82	20.20	5.80	26.34	10.78
Sears	50.00	1964-82	30.29	4.74	38.64	4.84
SherwinWilliams	66.65	1964-80	13.50	11.94	34.40	21.90
Superior Oil	53.00	1964-78	0.00	0.00	14.83	9.04
Warnaco	70.00	1975-82	NA	NA	14.07	22.52
Champion Int´l	74.00	1970-82	17.11	13.87	20.60	13.33
Cr.Zellerbach	97.65	1964-80	28.18	17.64	28.74	6.98
Ford	85.32	1964-82	18.46	13.88	20.52	14.36
Kelsey Hayes	73.00	1970-82	14.78	7.87	23.79	5.14
Fruehauf	91.00	1964-82	19.84	8.06	22.69	4.81
GE	92.00	1964-82	24.35	3.98	33.32	6.71
GF	100.00	1974-80	27.11	4.53	34.45	6.14
Goodyear	83.95	1964-78	10.87	6.87	21.98	1.70
Kraft	83.53	1964-69	16.36	2.94	36.52	2.17
Murphy Oil	77.00	1970-82	0.00	0.00	7.75	1.72
Occidental Pet.	75.82	1966-82	12.07	9.43	18.72	15.76
Safeway	100.00	1970-82	0.23	0.12	22.18	2.81
Teledyne	77.00	1974-82	41.97	9.17	0.00	0.00
Texaco	73.79	1964-82	21.85	5.20	30.92	5.98
Union Carb.	75.00	1964-82	22.36	7.12	25.70	4.99
Union Oil	87.00	1975-80	24.94	11.86	13.74	1.04
Westinghouse	80.42	1964-82	16.78	5.92	28.54	8.40
Total 29Companies(n=383)			20.19	11.39	25.81	11.01

* Average control during the period
NA=Not Available

TABLE 32

Comparison of Coefficient of Variation(*)
in Payout Ratio including Depreciation

	Equity Control **	Period	Coefficient of Variation in Payout Ratio: Canadian Subsidiary	U.S. Parent
Celanese	57.00%	1964-82	0.91	0.34
Conoco	57.59	1964-80	0.08	0.23
Cr.Cork & Seal	70.00	1964-75	0.17	0.00
Dana	61.63	1964-82	0.31	0.25
Exxon	70.00	1964-82	0.21	0.14
Gene´l Dynamics	55.00	1969-82	0.84	1.28
Gulf	66.63	1964-82	0.21	0.21
Scott	54.58	1964-82	0.29	0.41
Sears	50.00	1964-82	0.16	0.13
Sherwin Willi.	66.65	1964-80	0.88	0.63
Superior Oil	53.00	1964-78	0.00	0.61
Warnaco	70.00	1975-82	NA	NA
Champion Int´l	74.00	1970-82	0.81	0.25
Cr.Zellerbach	97.65	1964-80	0.62	0.24
Ford	85.32	1964-82	0.75	0.70
Kelsey Hayes	73.00	1970-82	0.53	0.22
Fruehauf	91.00	1964-82	0.41	0.21
GE	92.00	1964-82	0.16	0.20
GF	100.00	1974-80	0.17	0.18
Goodyear	83.95	1964-78	0.63	0.07
Kraft	83.53	1964-69	0.18	0.06
Murphy Oil	77.00	1970-82	0.00	0.22
Occidental Pet.	75.82	1966-82	0.78	0.84
Safeway	100.00	1970-82	0.52	0.12
Teledyne	77.00	1974-81	0.22	0.00
Texaco	73.79	1964-82	0.24	0.19
Union Carb.	75.00	1964-82	0.32	0.19
Union Oil	87.00	1975-80	0.48	0.08
Westinghouse	80.42	1964-82	0.35	0.29
Total 29Companies(n=383)			0.56	0.43

* Coefficient of Variation=Standard deviation/Average payout
** Average control during the period
NA=Not Available

TABLE 33

U.S. Subsidiaries
in Other Countries

Company	Host Country	Average Equity Control *	Standrad Deviation	Period
Ford	Belgium	74.47	11.24	1964-81
Anderson Clayton	Brazil	100.00	0.00	1979-82
Ford	Brazil	89.00	0.00	1979-81
Ford	Denmark	71.87	9.03	1964-82
Ford	Finland	71.48	2.13	1964-80
Adam Opel(GM)	Germany	100.00	0.00	1978-81
Texaco	Germany	100.00	0.00	1979-82
Standard Elektek (ITT)	Germany	86.00	0.00	1979-81
Celanese	Mexico	40.00	0.00	1979-80
Goodrich	Mexico	35.00	0.00	1979-82
Kimberly Clark	Mexico	40.00	0.00	1979-81
Union Carbide	Mexico	45.70	0.00	1978-82
Ford	Netherland	88.19	11.07	1964-80
Ford	Sweden	85.06	10.22	1964-81
Dana	U.K.	69.00	0.00	1979-80
Woolworth	U.K.	52.70	0.00	1964-82
Heinz	U.K.	100.00	0.00	1979-82
Esso (Exxon)	U.K.	100.00	0.00	1978-82
IBM	U.K.	100.00	0.00	1979-80

* Average control during the period

TABLE 34

Correlation between U.S. Parent´s Payout Ratio and Non-Canadian Susidiaries´ Payout Ratio

Company	Host Country	Average Equity Control *	Period	Correlation
Ford	Belgium	74.47	1964-81	0.29
Anderson Clayton	Brazil	100.00	1979-82	0.54
Ford	Brazil	89.00	1979-81	0.35
Ford	Denmark	71.87	1964-82	0.08
Ford	Finland	71.48	1964-80	-0.07
Adam Opel(GM)	Germany	100.00	1978-81	-0.01
Texaco	Germany	100.00	1979-82	-0.63
Standard Elektek (ITT)	Germany	86.00	1979-81	-0.50
Celanese	Mexico	40.00	1979-80	N.A
Goodrich	Mexico	35.00	1979-82	-0.50
Kimberly Clark	Mexico	40.00	1979-81	0.79
Union Carbide	Mexico	45.70	1978-82	-0.45
Ford	Netherland	88.19	1964-80	0.06
Dana	U.K.	69.00	1979-80	N.A.
Woolworth	U.K.	52.70	1964-82	0.35
Heinz	U.K.	100.00	1979-82	0.89
Esso (Exxon)	U.K.	100.00	1978-82	0.85
IBM	U.K.	100.00	1979-80	N.A
Total 18 Companies (n=130)				0.16

* Average control during the period
NA = Not Available

TABLE 35

Average Payout Ratio of
U.S. Subsidiaries
in Other Countries

Company	Host Country	Period	U.S. Subsidiaries Average Payout Ratio	U.S. Subsidiaries Standard Deviation	U.S. Parents Average Payout Ratio	U.S. Parents Standard Deviation
Ford	Belgium	1964-81	71.80	40.70	50.94	69.75
Anderson Clayton	Brazil	1979-82	111.73	60.17	28.55	.54
Ford	Brazil	1979-81	78.12	33.50	2.04	33.04
Ford	Denmark	1964-82	15.63	33.17	48.26	68.78
Ford	Finland	1964-80	77.64	37.52	54.74	69.65
Adam Opel(GM)	Germany	1978-81	84.54	24.92	50.92	134.00
Texaco	Germany	1979-82	83.64	11.34	37.66	15.87
Standard Elektek	Germany	1979-81	140.99	100.71	58.14	26.00
Celanese	Mexico	1979-80	25.76	6.82	36.45	6.41
Goodrich	Mexico	1979-82	17.97	7.54	2.90	58.51
Kimberly Clark	Mexico	1979-81	13.57	2.03	33.91	10.81
Union Carbide	Mexico	1978-82	19.76	3.95	45.84	21.94
Ford	Netherland	1964-80	42.64	86.85	54.74	69.65
Ford	Sweden	1964-81	NA	NA	50.94	69.75
Dana	U.K.	1979-80	21.44	.25	42.46	19.70
Woolworth	U.K.	1964-82	81.35	24.35	43.23	10.22
Heinz	U.K.	1979-82	54.44	22.96	35.73	1.98
Esso (Exxon)	U.K.	1978-82	88.10	51.71	50.63	8.79
IBM	U.K.	1979-80	56.01	7.54	54.57	6.43
Total 19 Companies (n=130)			59.59	53.85	46.05	56.86

NA = Not Available

TABLE 36

Coefficient of Variation in
Average Payout Ratio of
U.S. Subsidiaries
in Other Countries

Company	Host Country	Average Equity Control *	Period	U.S. Subsidiaries Coefficient of Variation	U.S. Parents Coefficient of Variation
Ford	Belgium	74.47	1964-81	0.57	1.37
Anderson Clayton	Brazil	100.00	1979-82	0.54	0.02
Ford	Brazil	89.00	1979-81	0.43	16.22
Ford	Denmark	71.87	1964-82	2.12	1.43
Ford	Finland	71.48	1964-80	0.48	1.28
Adam Opel(GM)	Germany	100.00	1978-81	0.28	2.63
Texaco	Germany	100.00	1979-82	0.14	0.42
Standard Elektek	Germany	86.00	1979-81	0.71	0.44
Celanese	Mexico	40.00	1979-80	0.26	0.16
Goodrich	Mexico	35.00	1979-82	0.42	20.21
Kimberly Clark	Mexico	40.00	1979-81	0.15	0.32
Union Carbide	Mexico	45.70	1978-82	0.20	0.48
Ford	Netherland	88.19	1964-80	2.04	1.28
Ford	Sweden	85.06	1964-81	NA	1.37
Dana	U.K.	69.00	1979-80	0.01	0.47
Woolworth	U.K.	52.70	1964-82	0.30	0.24
Heinz	U.K.	100.00	1979-82	0.42	0.06
Esso (Exxon)	U.K.	100.00	1978-82	0.59	0.17
IBM	U.K.	100.00	1979-80	0.13	0.12
Total 19 Companies (n=130)				0.90	1.23

* Average control during the period
NA = Not Available

TABLE 37

Average Payout Ratio of
U.S. Subsidiaries
in Other Countries
Under Fixed Exchange Rates
and Floating Exchange Rates

Company	Host Country	Average Equity Control *	Period	Average Payout Ratio	Standard Deviation	Coefficient of Variation
Fixed Exchange Rate (1964-72)						
Woolworth	U.K.	52.70%	1964-72	84.05%	9.58%	0.11
Ford	Belgium	74.58	1964-72	72.61	25.41	0.35
Ford	Denmark	70.89	1964-72	26.59	18.97	0.71
Ford	Finland	73.00	1964-72	64.56	37.24	0.58
Ford	Netherland	82.40	1964-72	48.33	114.54	2.37
All 5 Companies	(n=45)			59.23	56.99	0.96
Floating Exchange Rate (1973-82)						
Celanese	Mexico	40.00%	1979-80	25.76%	6.82%	0.26
Goodrich	Mexico	35.00	1979-82	17.97	7.54	0.42
Kimberly Clark	Mexico	40.00	1979-81	13.57	2.03	0.15
Union Carbide	Mexico	45.70	1978-82	19.76	3.95	0.20
Anderson Clayton	Brazil	100.00	1979-82	111.73	60.17	0.54
Ford	Brazil	89.00	1979-81	78.12	33.50	0.43
Adam Opel(GM)	Germany	100.00	1978-81	87.54	24.92	0.28
Texaco	Germany	100.00	1979-82	83.64	11.34	0.14
Standard Elektek (ITT)	Germany	86.00	1979-81	140.99	100.71	0.71
Dana	U.K.	69.00	1979-80	21.44	0.25	0.01
Woolworth	U.K.	52.70	1973-81	78.73	33.94	0.43
Heinz	U.K.	100.00	1979-82	54.44	22.96	0.42
Esso (Exxon)	U.K.	100.00	1978-82	88.10	51.71	0.59
IBM	U.K.	100.00	1979-80	56.01	7.54	0.13
Ford	Belgium	74.47	1973-81	70.99	53.60	0.76
Ford	Denmark	71.87	1973-82	5.76	40.65	7.06
Ford	Finland	71.48	1973-80	92.35	34.15	0.37
Ford	Netherland	88.19	1973-80	36.24	46.45	1.28
All 18 Companies	(n=85)			59.78	52.46	0.88
Total 23Companies	(n=130)			59.59	53.85	0.90

* Average control during the period

TABLE 38

Basic Statistics
of Canada and U.S.

	Canada			U.S.	
Year	End of Period Exchange Rate (1)	Average Interest Rate (2)	Consumer Price Index (3)	Average Interest Rate (2)	Consumer Price Index (3)
1964	1.0741	3.74	102.0	3.55	101.3
1965	1.0750	3.97	104.0	3.95	103.0
1966	1.0838	5.00	108.0	4.88	106.0
1967	1.0809	4.60	112.0	4.33	109.0
1968	1.0728	6.25	117.0	5.35	113.6
1969	1.0731	7.17	122.0	6.69	119.7
1970	1.0442	5.99	125.9(70.2)	6.44	126.8
1971	1.0098	3.56	72.2	4.34	132.3(75)
1972	0.9899	3.56	75.7	4.07	77.7
1973	1.0001	5.47	81.4	7.03	82.6
1974	0.9780	7.83	90.3	7.87	91.6
1975	1.0170	7.40	100.0	5.87	100.0
1976	0.9860	8.87	107.5	4.99	105.8
1977	1.0635	7.33	116.1	5.27	112.7
1978	1.1407	8.67	126.5	7.22	121.2
1979	1.1714	11.68	138.1	10.04	134.9
1980	1.1693	12.80	152.1	11.62	153.1
1981	1.1989	17.72	171.0	14.08	169.0
1982	1.2337	13.64	189.5	10.72	179.4

(Source: IMF; International Financial Statistics)

(1) Period Average in units of Canadian dollars per U.S. dollar
(2) Period Average Treasury Bill Rate
(3) Basis 100 in 1963 during 1964-70, 100 in 1975 during 1971-82